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BRANCH I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Cursory Remarks on the Theories of Messrs Ricardo and Torrens.

Nullius addictus jurare in verba magistri.—Hor.

Sir,

The science of Political Economy,—though what are its pretensions to the dignity of a science it is not for me to inquire,—seems to have succeeded to those notable metaphysical disquisitions for which our northern philosophers were once so famous; and as this same science, we are assured, has not only become fashionable, but is in fact of the very highest importance to society, and to no class more than to agriculturists,—it may perhaps be allowed me to occupy a few of your pages with some plain, common-sense remarks on some of the leading doctrines of two of its latest and most celebrated expositors.

I. Value.

'Possessing utility,' says Mr Ricardo, 'commodities derive their exchangeable value from two sources: from their scarcity, and from the quantity of labour required to obtain them.'

In regard to value derived from scarcity, he observes—'some rare statues and pictures, scarce books and coins, wines of a peculiar quality, which can be made only from grapes grown on a particular soil, of which there is a very limited quantity, are all of this description. Their value is wholly independent of the quantity of labour originally necessary to pro-

duce them, and varies with the varying wealth and inclination of those who are desirous to possess them.'

'By far the greatest part of those goods which are the objects of desire, are procured by labour; and they may be multiplied, not in one country alone, but in many, almost without any assignable limit, if we are disposed to bestow the labour necessary to obtain them.'

The exchangeable value of these goods, accordingly, is derived from the quantity of labour required to obtain them; it is this labour which measures their value in exchange; and, though the supply and demand of the market may sometimes raise the price of some of them above this real value or natural price, and sometimes sink it lower than this natural price, this effect can only be temporary, as no commodity would long continue to be produced, unless the quantity of labour required for producing it was paid for at the same rate with an equal quantity of labour bestowed on the production of other commodities with which it is exchanged.

So much for the sources of value—'a doctrine,' as Mr Ricardo observes, 'of the utmost importance in political economy; for from no source do so many errors, and so much difference of opinion in that science proceed, as from the vague ideas which are attached to the word *value*.'

From this doctrine, the produce of the soil is said to form no exception; its exchangeable value—the exchangeable value of the produce of grazing and meadow lands, for instance, as well as of corn—is derived from the quantity of labour required to obtain it, in the same manner as the exchangeable value of a dress of Brussels lace, a chest of surgeons' instruments, or a piece of Gobelin's tapestry.

The land or the soil itself does not therefore enter into the question of value, but only the labour bestowed on it. Without labour, its produce would have no value in exchange, any more than air and water, with which the productive power of the soil has been most absurdly compared.

It is true that land, as well as the coins and statues already mentioned, exists in a state of comparative scarcity, in most countries, and ought therefore, in most cases, to derive a value from the first of Mr Ricardo's two sources: but it is not to this circumstance that rent is owing; for rent is nothing but the difference in the quantity of produce obtained from the same or different land by means of equal quantities of labour. Rent, like every thing else, is thus derived from labour; and the upshot of the whole is, that neither land, nor the produce of land, possesses any exchangeable value but what it derives from la-

bour. Where no labour is bestowed in obtaining the produce of the soil, there ought to be no rent.

Now, I must beg leave to say, that this notion of labour being the only source and measure of value, appears to be directly at variance with the fact; and that the most common produce of the soil, as well as the coins, pictures, and statues, has a value altogether independent of the labour bestowed in obtaining it; and that this value 'varies with the varying wealth and inclination of those who are desirous to possess' it; or, in common language, it is a value dependent from time to time upon the state of the supply and demand, and on no other circumstance whatever.

If this be not so, I should like to know why a rent of 5*l.* an acre, or more, is paid to the proprietor of rich meadow land, and why the tenant sells its produce at two or three times that sum; why the grass that grows on an acre in the meadows near Salisbury Crags, for example, and on which almost no other labour is bestowed than that of cutting and carrying its produce to the Edinburgh market, will sell for as much money as an able-bodied workman will receive for the labour of two or three of the best years of his life? What has the rent of such lands to do with the different products of equal quantities of labour; or what has the value of their produce to do with the quantity of labour required to obtain it? It is just as much a case of scarcity, or of demand and supply, as that of the most esteemed wines, or the most admired specimens of the fine arts. Nor, in mentioning these last meadows, which have a value from their local situation, is it meant that the objection to the theory now under consideration, is at all strengthened; for it applies with equal force to the extensive meadows and grazing pastures in almost every part of England, which, without any advantages of vicinity to a great market, do, almost invariably, yield a higher rent than corn-land on which a great deal of labour is indispensable.

The exchangeable value of the produce of these lands is not, therefore, derived from labour; and yet, according to Mr Ricardo's doctrine, it ought not to be derived from scarcity. The scarcity of fertile land is no doubt assigned as a reason why such land pays rent, when the demand becomes such as to require inferior soils to be cultivated for corn: but here, the question is only about the natural produce of the soil, and not about crops raised by labour. Besides this, the scarcity of fertile land, and the absolute scarcity of land produce, are very different things. So far is there from being any such scarcity of the latter, that we are assured even corn is sold at such a price as

to afford no rent, what is grown upon the land last taken into cultivation making no other return than the wages of labour, and the profits of capital. I do not therefore see how he can consistently allege, that the natural produce of the lands I have mentioned, which sells at a price 'wholly independent of the quantity of labour necessary to obtain it,' derives its value from scarcity.

The truth however is, whatever Mr Ricardo may think, that the produce of land is *not* one of those 'goods which may be multiplied without any assignable limit:' The meadows and pastures we have mentioned, cannot be so multiplied; much of the produce of such lands cannot be brought from a distance; and it sells accordingly for a great deal more than the wages of the labour required to obtain it. We should be glad to know, indeed, a single instance of such kind of goods as can be multiplied without any assignable limit. Is it cotton cloth? Is it woollens? Is it hardware? Surely, upon a moment's reflection it must be evident, that all these, and indeed every other commodity, must be limited in their quantity by the limited quantity of land from which their raw materials must be collected; just as much so as the quantity of wines of a peculiar quality. The limits are only more extended in the former cases than in the latter; but this is a difference in the degree, not in the principle itself.

We may conclude, with regard to this first head of value, that labour is not the source or the measure of the value of land produce: and, until some more intelligible exposition be offered, it will be sufficient to abide by the clearly practical statements of Adam Smith. In a country where all the land is appropriated, the price of its produce will depend upon the demand and the means of its population; and when these are such, as is almost universally the case, as to raise it higher than will suffice to pay for the labour required, the surplus necessarily goes to the proprietor as rent. It is of no consequence how much less in value the labour may be than the price of the produce. In the case of the natural produce, it is commonly very small in proportion; and in that of corn and other cultivated plants, it may be equal to three fourths of the price or more: The wages of labour can never long amount to more than that price, otherwise the produce would not be brought to market: The sum of these wages, therefore, determines the *minimum* price; but it may be higher than this sum in any conceivable proportion.

II.—Rent.

With regard to the recent discoveries under this head, the preceding remarks may serve to show, that Mr Ricardo's theory

of rent is totally unfounded. The natural produce of land, as has been observed, yields a rent, and not unfrequently a higher rent, than that of land cultivated with the greatest expenditure of labour. But as this subject has been discussed at some length in one of your late Numbers, I shall only take leave to express my admiration at the paltry sophism about *capital* being employed without its produce paying rent,—a subtlety as useless as it is unworthy of that truly profound writer, and a remarkable proof of the misleading influence of system; and proceed to notice what I conceive to be another radical error of that gentleman and some others, as to,

III. The Different Quality of Soils.

If we were to adopt Mr Ricardo's general views on this subject, we must conceive that corn is not only the regulating produce of land fit for cultivation, but that it is the only produce; that it is not grown on the same land once only in two years or seldomer, but every year; and that there is no other scale to mark the various qualities of the soil, but merely the quantity of corn that it yields, with a given quantity of labour.

If it be the fact, however, that the inferior produce of some soils in corn is compensated by their greater produce in some other crops, and that at least three-fourths of the corn land of Britain is never, in any one year, under corn, but under these other crops; it is evident that a different rule must be formed for estimating the comparative productiveness of soils, than the quantity of corn alone. A soil which does not yield 24 bushels of wheat the acre, may be not only as valuable as another that yields 30 bushels, the labour being the same over the whole course of cropping of both; but, in fact, it may happen, and does happen, that the bushel of wheat is raised with as little, or with less labour, upon what Mr Ricardo would call the inferior soil, than upon the other which yields the greater quantity per acre.

Two circumstances, known to every cultivator of land, will explain this. 1*st*, The same soil is not equally suited to every kind of crop which it is found profitable to cultivate; but particular soils, independent of all extraneous circumstances, are naturally better adapted to one or more of these crops, than to others. In many of the hilly districts of Scotland, on land not worth a rent of 10*s*. an acre, more oats are often grown on an equal space, than on the richest soils of the south of England; and on these, too, a crop of turnips may be got worth 4*l*. or 5*l*. an acre, which, on much of the best wheat soils, cannot be grown at all. And, 2*d*, Ameliorating crops on soils naturally inferior in the production of the most valuable species of

corn, in many cases supply the place of labour, and either bring up the produce in corn to a level with that of the naturally richer soils, or prevent the real cost of producing a given quantity per acre from being greater on the former than on the latter. It does not, I apprehend, cost more in labour, if so much, to produce a bushel or a quarter of wheat on the sandy soils of Norfolk, than on the rich clays of the Carse of Gowrie; for on the one, it follows turnips or clover, and, on the other, either beans, a much more precarious crop, or an expensive plain fallow; and it certainly costs less to raise barley on the former soil, than on the latter. In like manner, after somewhat inferior land has been pastured for three years or more, as is a common practice in the case of sandy soils, it will often yield, in a course of tillage of four years, a greater quantity of oats and barley, than a soil naturally richer that is kept constantly in tillage; and with less expense of labour.

To apply these remarks to the alleged gradation in the quality of soils, it is evident that, upon a piece of land of what is called a second or third quality, by adapting the kind of corn to the quality of the soil, and by means of intervening cattle crops, you may grow a quarter of corn with no more labour than upon land naturally of the first quality, if it be unfit for growing any thing but grain or pulse, with clover once in four or six years. The terms, superior and inferior soils, are therefore not very accurate in the way they are used by Mr Ricardo; as that which may be of superior quality in the production of wheat, may be inferior in that of other crops, for which there is, equally with wheat, an effectual demand and a remunerating price, and *vice versâ*. Why is the land that yields 30 bushels of wheat after a plain fallow, to be called superior to that which yields 24 bushels after turnips, though the labour for these two years be in both cases the same? May we not rather say, that the former, instead of affording a rent of six bushels an acre more than the latter (the difference between the produce obtained by equal quantities of labour, according to Mr Ricardo), will not afford even an equal rent; as the whole of the labour must, in the one case, be charged against the wheat, and, in the other, it is divided between the two crops, the turnips and the wheat?

The only rule by which you can judge of the value of soils, or class them under different qualities of first, second, third, &c., is not by their produce in corn alone, but by the value of their whole produce, compared with the whole labour required to obtain it; including, under the word labour, here and elsewhere, the profits on the farmer's capital—for capital, it is said, is nothing but accumulated labour.

I have said more on this point than may seem necessary, if it were not with a view to my next division; for we should attend to the meaning which Mr Ricardo and others give to the term inferior soils, and in what sense a soil may truly be said to be of an inferior quality, before we can have a clear view of their doctrine as to the ruin that hangs over our heads, if we persist in cultivating what they call,

IV. Inferior Soils.

The Corn-laws, it seems, raise the price of grain in this country, and force us to cultivate inferior soils, in order to obtain the necessary supply; and on these soils more labour and capital are required to produce a given effect—to raise a given quantity of grain, than on better soils. The real or natural price of corn is thus enhanced; and its exchangeable value being derived from this natural price, or the quantity of labour required, must be raised accordingly. A rise of wages must necessarily follow a rise in the price of corn; and, whether this rise of wages lowers profits, and prevents the accumulation of capital, as Mr Ricardo contends, or exhibits itself in a rise of manufactured goods, as seems to be the opinion of Mr Torrens, the consequence is much the same.

'Every restriction on the import trade in corn,' says Mr Torrens, 'which forces into cultivation land of inferior quality, not only deprives the particular portions of labour and capital thus turned upon the soil, of their most beneficial employment, but, by increasing the natural price of corn, lowers, universally, the productive powers of labour and capital, and gives a general check to the prosperity of the country.' The cultivation of inferior soils is, therefore, in every point of view, a most ruinous business.

To enter fully into this subject, it would be necessary to inquire, *first*, Whether 'restrictions on the import trade' really 'force into cultivation land of inferior quality;' that is, I suppose, raise the price of corn so high as to make it profitable to cultivate inferior soils. This indeed is thought, by both the writers under consideration, to be too clear to require any proof; and is accordingly taken for granted. Yet my own humble opinion, I confess, is very different. Remove every restriction, and begin a perfectly free corn trade from this moment; and, by this day twenty years hence, you will find that the average price of corn to the British consumer has been higher than in any twenty years of the last century, during which foreign corn was entirely excluded. Do you think we shall ever get cannons, gunpowder, muskets, and all the other *materiel* of

war cheaper from St Petersburgh, Dantzic, Paris or Washington, than we shall be able to make them at home? And is bread not as necessary to us as gunpowder? But this, of course, is nothing better than speculation; and let us therefore take it for granted, that these, and the other powers of Europe and America, will never be so ungenerous as to refuse us the means of subsistence at moderate prices.

2. But, in the *next* place—Are we really under the necessity of having recourse to inferior soils? Have we no other choice than either to throw away our labour and capital upon naturally barren land, or become dependent upon other nations for bread? Is there no land in the British Islands that will yield the supply we want with very little labour, with a great deal less labour than is at present employed on most of our corn land? Surely no man will be so rash as to answer these questions in the negative, in defiance of the undoubted fact, that the greater part of our richest soils yield no corn at all. If it be asked, Why then not plough up these lands rather than the inferior soils? the answer is obvious—*first*, The demand for their produce raises its value so as to make them yield a greater rent to their owner than if they were brought under tillage; or the rent that could be paid for them in tillage would not be sufficient to cover their present rent, together with the risk of their being deteriorated—and, *second*, The internal policy of the country, particularly in regard to tithes, discourages the cultivation of corn on soils of every description, but particularly on rich pasture land, which yields a valuable produce spontaneously. If we must have corn cheap (and it may be easily grown cheap enough if we please, without having recourse to either inferior soils or importation), let us be content to live like the people of those enviable countries, Poland for instance, where it is so cheap,—that is, abandon the use of meat, dairy produce, and all the other articles which these lands afford indirectly with little labour; and then the rich velvet turf will be as rare in England as it is now in France, and corn fields as abundant in the one country as in the other.—We shall again have to advert to this matter, and show that the demand for the natural produce of the soil in a rich country, is the main cause why it cannot grow corn so cheap as in poor countries, where there is no such demand; and not any real necessity which the former country is under to cultivate soils inferior to those of the latter.

3. But further—We might lay these considerations entirely out of view, and consider the effect of applying capital to the cultivation of soils really less productive naturally than the soils of other countries; and we deny that such an application of capi-

tal is necessarily wasteful, unproductive, and checks the prosperity of the country.

A distinction, and a very obvious one, we think, must be made between the application of capital to the improvement of land, and to manufactures. The whole of the capital employed in the purchase of cotton wool, for instance, in spinning, weaving, bleaching, &c. must be repaid with a profit by the sale of the wrought goods; and no part of that capital remains behind with the manufacturer, to aid future production, excepting the amount of his profits. It is an operation which begins and ends in a few months, and gives no other result than the 10, 15, or 20 per cent. of profit which goes into the pocket of the capitalist. If he repeats the process, he must again employ the same amount of capital to produce the same effect; and every such process is detached and insulated from those that preceded or may follow it, if it were repeated a thousand times. But if you employ capital in the improvement of the soil, in draining, manuring, fencing, &c. it does not, indeed, come back at the end of a few months increased by its profit, but in the shape of a permanent income or a long annuity, though in amount perhaps less than the manufacturer's profit alone; and to get back the capital itself, with its profits, this income or annuity must be sold, like a share in the public funds, at the market prices of the day. So far these two modes of applying capital are very different, and can with difficulty be compared, so as to show which mode is the most advantageous. The comparison would be between employing 100*l.* to yield, a few months or a year hence, a profit of, say 10 per cent., the capital itself returned along with it; or the same sum in such a way as to yield a permanent income of, say 6 per cent., with a prospect of getting back the capital itself, by carrying this annuity to market. Supposing the labour and risk of the capitalist, and the certainty of the result, the same in both cases; and the question, which of the modes of employment was preferable, would depend upon the amount and value of the annuity, in the one case, compared with the amount and profits of the capital in the other,—the period of employment being the same in both. But let us admit, for the sake of argument, that the employment of the manufacturer's capital is clearly the most profitable to himself, or that the annuity drawn from the land will not do more than replace the capital with a profit of 6 per cent., instead of 10; shall we therefore at once conclude, that the manufacturer's capital is employed with greater benefit to the country than the land-owner's?

Suppose, now, that both these capitalists realize their respective funds, and leave the country, the one with his 100*l.* and

so many profits of 10 per cent. on it, and the other with the same number of years' annuity and the market price of it, the one being to the other as 110 to 106, does it not readily occur to any one who will take the trouble to give a moment's consideration to the subject, that the result of their operations, in respect to the country they have left, is very different? Without going into minute or remote consequences, it must surely be evident, that the manufacturer has left nothing behind him, while the other has left an addition to the productive territory of his country; or, which is the same thing, has made a part of that territory permanently, or for a long period, more productive than it was before.

It is this circumstance of permanency, or, at least, of indefinite duration, which mainly distinguishes the two cases; or, in other words, the effect of the capital employed upon the land, is not only to make it yield a greater produce than it did before, after replacing that capital with a profit; but its effect is further to render the land capable of yielding the same enlarged produce ever after, or for a number of years, without any new investment of capital. The cultivator obtains this enlarged produce by means of the ordinary circulating capital required for cultivation; and, to obtain a given quantity of corn, has no occasion, ever after, to employ more labourers than if the land had been originally more fertile. The first outlay may be considerable; but, by the supposition, it is already replaced with a profit: But, whether it be so or not, its employment has prevented the dreaded rise in the natural or labour price of corn; and the labour of any number of hands will now produce as much corn on this formerly inferior soil, as on such as was originally of a much better quality.

Let us suppose, now, that we really have extended tillage in this our little island, till we must either have recourse to miserable soils of our own, or the more fertile territory of our neighbours; and that, in these circumstances, a million of acres of good corn land might, by some means or other, be added to our surface, by Lancaster's terrace-work, for instance, or by means of fiorin, which, by yielding six or eight times the ordinary produce of herbage crops, would leave a large proportion of our present territory disposable for corn, or by any means whatever—no matter what;—and that the terms on which this addition could be made, was the payment of ten millions Sterling. Well, it so happens that, at the present price of corn in this country, this new territory would yield a nett land-rent equal, or nearly equal, to the present interest of money, or half a million. Would it not be profitable as well as good policy to

make the purchase, rather than depend on our neighbours for bread? And what is the difference between laying out a part of the capital of the country in improving its present territory, and making this supposed addition to it?

But still, it may be said, take it how you will, here are 100 acres of land from which A, with the labour of 20 men, raises yearly 100 quarters of wheat; and there is another piece of land of the same extent, on which B must employ 24 men, to raise the same quantity. The natural or labour price of wheat is therefore higher on B's land than on A's; and it will not alter the case in the least, though B should employ such a number of extra hands at once, and keep them employed for a few years, as would give to his land such a degree of artificial fertility as should ever after enable him to raise the 100 quarters with 20 hands, the same number that A has employed all along. To employ capital at once in increasing the future productiveness of land, or, in other words, to expend capital in the improvement of inferior soils, so as to bring them up to the level of lands naturally more fertile, is just the same thing, in so far as concerns the question under consideration, the natural price of corn,—as if the money had been laid out from year to year in employing a greater number of labourers, to obtain a given quantity of produce.

To this I have to answer, that there are two different parties interested in the production of corn; the first is the person whose land and capital (the same person being here supposed to be the owner of both) produces it; and the second, the person who consumes it, that is, the nation at large:—now I venture to maintain, notwithstanding the formidable appearance of this argument, that there is in fact nothing in it, as far as either of these parties is concerned.

B's land requires 4 labourers more than A's to obtain an equal quantity of wheat; and while this continues to be the case, the natural or labour price of B's wheat is no doubt higher than that of A's; and so far, if we admit the theory of Messrs Ricardo and Torrens, that labour is the natural price of corn, the national prosperity is somewhat checked by a consequent rise in the market price of corn and labour. But, in so far as the interest of A and B is concerned, this difference in the quantity of labour required to obtain a given quantity of produce is a matter of perfect indifference; for their capitals are not the same; their land is not of the same value, and it is sufficient if each draw a profit corresponding to his capital. A employs a capital greater than B, by, say 1000*l.*

But, on the other hand, if B, by laying out 1000*l.* on the

improvement of his land, obtains ever after as much wheat as A does, and with the same number of labourers; their situation is not only the same,--their capital and their profits; but the condition of the consumer, in as far as concerns the labour price of corn, is ever after the same as if B's land had been originally of the same quality with A's. If the objector chuses to recur to his argument about its making no difference whether the additional capital required to make B's land as productive as A's, be laid out at once, or from year to year, by the employment of the 4 additional labourers, and should persist in asserting that the labour price of corn on B's land is still higher than on A's, I would ask him how his interest is affected by the circumstance of A's buying his 100 acres at once by the payment of a price 1000*l.* more than B paid for his; and B's buying his land for 1000*l.* less than A's, and afterwards adding this sum to the original price, to make his property as valuable as A's? If it be said that B's 1000*l.* might have been better employed than in the improvement of his inferior soil, is not the same thing true, if true at all, of A's original purchase too? And must not the tendency of such an objection be to prove too much, namely, that to buy land at all is an unprofitable employment of capital?

Upon the whole, if it were true, as in my opinion it certainly is not, that the quantity of labour employed to obtain land produce, is the natural price of that produce from which its exchangeable value is derived, it would not follow that capital is not as advantageously employed for all parties concerned, in the improvement of land of an inferior quality, as in the purchase of better land, taking it for granted always that such improvement is real, permanent, or of indefinite duration, and not unprofitable to him who employs the capital.

4. But if we should admit, in their fullest extent, all the bad effects ascribed to the cultivation of inferior soils, the question would still be very far from being settled. It would still be necessary to chuse between two evils, or at least dangers,—the unprofitable employment of a part of our capital on our own soil, and a dependence on foreign nations for the means of subsistence. On this point, which I have slightly alluded to already, I shall not trouble your readers with any remarks; for every one can judge of the danger of such dependence, for himself, after the experience we have had of it within these few years. But do not throw in my teeth the stale axiom, about all trade being an exchange of equivalents,—that if we buy their corn, foreigners must buy our goods, and so on. There is no equivalence in such a trade as this. Luxuries, and even conveniences

weigh light in the scale against the absolute necessaries of life, and more especially if this last scale be further depressed by the jealousy and avarice of our neighbours and their rulers.

It is as little to the purpose to tell us of Holland, Venice, Genoa, and such comparatively insignificant countries. Holland never, in her best days, contained more than about a ninth part of the population of the British Isles. Foreign corn was, to her, a matter of real necessity, not an imaginary necessity founded on metaphysical speculations; and she is situated most favourably for receiving supplies, both from the rich corn countries in her neighbourhood, and, by means of her shipping, from more distant parts.

While I am on this subject of cultivating inferior soils, I cannot refrain from adverting to the following passage. 'In America and Poland,' says Mr Ricardo, 'on the land last taken into cultivation, a year's labour of any given number of men, will produce much more corn than on land similarly circumstanced in England.' Now, this assertion, with all submission, I do not believe, in as far as regards Poland; and I think it very doubtful even as to America, and more than doubtful as to the *wooded* land of America. What is meant by land 'similarly circumstanced in England,' may admit of some latitude of interpretation; and 'land last taken into cultivation,' is a phrase which has a peculiar meaning applied to it in his theory, denoting the poorest soil cultivated for corn: But I will venture to assert, that a great proportion of the corn raised in Poland, contains the labour of a much greater number of men, than an equal quantity of the corn grown in this country. The skill, the division of labour, and the machinery employed in British agriculture, are all infinitely superior to those of the Polish cultivator. Arthur Young long ago made a comparison in these respects between England and France; and M. Pictet, as appears from a late Number of your work, does not think there has been any great alteration in favour of French agriculture down to the present time.

But the doctrine, that the exchangeable value of corn, the growth of this country, is derived from the quantity of labour required to obtain it, is, as I have already endeavoured to show, irreconcileable with the fact, that the natural produce of much of our land possesses an exchangeable value as great as its cultivated produce, though the former is obtained with little or no labour as compared with the latter. It is in this direction, therefore, and not in the alleged necessity of cultivating inferior soils, that we must seek for the true causes of the higher natural or grower's price of corn in this country, than on the continent of Europe.

V. Natural Price of British Corn.

If, discarding all attempts to trace the anomalies of human affairs to one or two primary principles, we look at the real facts of the case, as they everywhere offer themselves to our view, we shall be compelled to agree with Adam Smith, that the exchangeable value of land produce is, in every country where all the land is appropriated, a monopoly price, wholly independent of the quantity of labour required to obtain it. No other limits but the number and wealth of the consumers can be assigned to the demand for it, and the price to which it may rise in the market; while the raw material, the land itself, from which it is obtained, is necessarily, so far as regards the extent of its surface, an invariable quantity. If we could be sure of being supplied with corn from foreign countries at a lower price than from our own soil, this circumstance of its being always sold at a monopoly price, would be the best of all reasons for a free trade, and not the alleged necessity we are under, of otherwise having recourse to our own inferior soils.

But, with regard to the grower's price of corn in Britain, it is certainly, at first view, a very extraordinary circumstance, that in France, the country which in many respects most resembles our own, the ordinary, and therefore the natural price of wheat, should be about 40s. a quarter, while in Britain, it has been admitted on all hands, that 80s. is required to remunerate the grower, and continue the present scale of production. Strange, however, as this may appear, it is not incapable of being accounted for; without having recourse to the unfounded notion, that a given number of hands do not raise as much corn in this country as in France, under all the real or supposed disadvantages of soil and climate.

It is not my intention to inquire to what extent the price o our wheat is enhanced by taxation, though that must be considerable. Even Mr Torrens admits the effect of taxation, and strives hard, with no great success, to reconcile such a fact with a free trade. But there are other causes, perhaps of still greater importance, which I think it more desirable to notice, because they bear more directly on the theory under consideration. These are, Rent and Wages.

1. If it be true, as I have endeavoured to show, that in Britain the natural produce of the soil yields a rent,—much of the meadows and pastures a higher rent than corn land, and even the worst soils, which by no human industry could be made to grow corn, still yield a rent in their natural state,—that rent, whatever may be its amount, must necessarily form an addition

to what is called the natural or labour price of corn, when such lands come to be cultivated. Nothing surely can be more absurd, than to pretend that a land-owner, who derives a rent of 10s. or 20s. an acre from his pastures, from his woodlands, sometimes as much as the lowest sum from his moors and mosses, will allow any one to plough and sow them with corn, without paying him at least the former rent. Even the Government lands in the Western States of America pay a rent as soon as they become private property. They are never sold for less than two dollars an acre; and the interest of this small sum is in fact a rent which, if the cultivator did not draw back in the price of his produce, he would not purchase them. His corn, or other produce, does therefore pay a rent, as well as the corn grown in England, on land worth 100 guineas an acre.

With this clear fact before us, it is easy to see why corn grown in Britain must have a higher exchangeable value than corn the growth of France:—the natural produce of the English territory, at least of that part of it on which corn might be grown, possesses a much higher exchangeable value. They do not give 8d. or 10d. for a pound of meat in France, nor so much for dairy produce, poultry, &c. as in Britain. They do not keep so many horses for purposes nowise connected with agriculture. Breeding, rearing, and grazing lands,—parks, and hay grounds,—not only bear no proportion in France to the extent occupied by them in England, but, what is more to the purpose, what the French have of such land does not yield perhaps half the rent. The demand for the produce of such lands does not raise its market price nearly so high as in England. If corn should rise a few shillings a quarter in France, it might be profitable to bring their grass lands under tillage; but when wheat was about 8*l.* a quarter in this country, very little, comparatively, of the English pastures, was disturbed by the plough. The rent which they paid in grass, and the risk of the soil being deteriorated by tillage, combined no doubt with other causes, still withheld them from adding to the supply, even when dearth was approaching to famine. In no other country in the world would this have been the case; and the reason is, that no other country, with an equal population, requires so much animal food and other products of grass land, or is so able to pay a high price for them. By a different system of management, perhaps, the English might still obtain all these products, and at the same time extend their growth of corn; but the question is not as to what *may be*, but what *is* the case at present.

All the land of Britain, therefore, paying a rent anterior to cultivation, and all, that is fit for growing corn, a rent much

higher than the same description of land in France, it is evidently impossible, even though the quantity and wages of labour required to produce a given quantity of corn were the same in both countries, that corn can be grown for the same price in the former as in the latter country. The English cultivator's plough, as soon as he puts it into the ground, is loaded with twice as many bushels of wheat, or the price of twice as many, as the French farmer's; it is only on this condition that he is allowed to put it in at all. This natural rent, as it may be called, must be paid from the price of his corn, otherwise the land must remain in grass.

It is nothing to the purpose to say, that if you keep too much land in grass, and too little in corn, the rent and produce of the former will fall, and of the latter rise; and thus the profits of both will approach to the same level;—for the same thing would happen in France from the same causes. We are not speaking about profits. What it is material to remark is, that the rent and produce of both descriptions of land must be higher in England than in France, as long as the former country is so much more wealthy than the latter. And as to the proportion between the extent of the grazing and corn lands of England, we must take it as it is, and be satisfied that it will not be soon altered in any considerable degree, when we have seen 8*l.* for a quarter of wheat ineffectual in bringing the former under the plough. Nothing, indeed, is likely to effect such an alteration, but such a degree of poverty among the great body of the people as should greatly diminish the demand for the produce of grass lands, or so low a price of corn as would oblige the cultivator to turn his tillage land to pasture. But in this last case, the demand for the produce of grass lands, the wealth of the country continuing the same, would increase in as great a proportion as the supply. The consumer who paid less for his bread, would be willing to use more meat and other articles, and be also able to purchase them.

Rent, therefore, the natural rent of land fit for growing corn, and which a cultivator must agree to pay before he can begin his operations, is one important reason why British corn must sell for more money than the corn of France, or of any foreign country whatever.

2. The only other cause I shall mention is the Rate of Wages.

The reason why corn is of less exchangeable value in France and Poland than in Britain, according to Mr Ricardo, is, that a given number of labourers will produce a greater quantity of it. The true reason I take to be, is, that the labourers obtain a larger portion of that quantity, or the price of a larger por-

tion, in Britain, than in France or Poland. In good times, an English labourer consumes much more meat and beer and wheaten bread, than a labourer in these countries; and the money price of these articles is probably more than it costs the other for his whole food, clothes and lodging. Voltaire once chose to make himself merry with the black stone, as he called the hard black rye-bread eaten by the Polish bondsman; though, till the Revolution, he needed not to have gone out of his own country to see the black stone. But certainly he would not have found it in the cottage of an English peasant; and we hope, in spite of all the clamour about the advantages of low wages, that it will never find its way thither.

But, to conclude these hasty remarks, which, much and unexpectedly as they have swelled upon my hand, do not extend to many topics of a subordinate nature, worthy of examination in the recent works of Mr Ricardo and Mr Torrens,—I shall only observe, with regard to the work of this latter gentleman, that if you admit his leading premises, such as they have been here stated to be, it will not be easy to refuse assent to his principal conclusions. His reasoning seems to me close, candid and temperate, and free from the bewildering subtlety of Mr Ricardo. He has been at great pains not only to express his sentiments with clearness, but by repetition and recapitulation, of which there is perhaps too much, to carry his reader always along with him. The only fault we have to find with his book is, that he has taken up his premises without due consideration, and that, if they were even unassailable in themselves, they require, for their application to the subject in hand, a degree of faith or hope in the intelligence and virtue of mankind which savours a great deal too much of optimism. What will this advocate for the perfect freedom of the corn trade say to the Report of the American Secretary, about prohibiting the importation of cotton, woollen, and iron manufactures, into that country; that is to say, the equivalents which we are told will never fail to procure us abundance of cheap corn? And is it not notorious, that other nations, since the return of peace, are endeavouring, by every means in their power, to manufacture all the most necessary articles for themselves, while they look with the utmost jealousy on the now very limited importation of the goods of this country? True, it may be said; but they injure themselves by this proceeding: it is their interest to buy from us, rather than manufacture themselves.—May be so; but they are not proficients in Political Economy: and we cannot compel them to learn, by the application of either the birch or

Congreve's rockets; and then, what would we suffer if we *must* buy from them upon their own terms? But what right have we to expect that other nations will not soon be able to make coats and shirts, and penknives, for themselves, as cheap as we can supply them? What great advantage have we over them, excepting in our machinery? and may they not soon learn to make and work a steam engine, if they do not know already, as well as ourselves? Except the single article of combing wool, we produce no raw material which any other nation may not soon produce. We grow no wine of a 'peculiar quality,' or of any quality; no silk, no cotton wool:—and the time may not be far distant, when even America may rival us in our iron goods. Let us, however, make the most of our soil; and if we cannot accumulate capital so fast as may be agreeable to Messrs Ricardo and Torrens, we shall at least be independent of all other nations for the means of subsistence.

12th April, 1820. L.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

A Gate of a New Construction: With a Plate.

SIR, *Dron*, 10*th January*, 1820.

I BEG leave to send you the plans and description of a gate for my cattle-court, which I erected about three months ago, and which I am highly pleased with. It may be found useful by others.

Every one knows how window sashes are commonly hung, viz. by cords, pulleys, and counterbalancing weights. My gate is only a new application of that principle. Fig. 1st, is the gate when shut; Fig. 2d, when open; and Fig. 3d, is the ground plan.

A A are the two posts made from a home-grown fir tree 9 inches diameter, sawn through the middle, and 16 feet long. They are inserted one foot in the ground, and show fifteen feet above it. The flat sides face each other, and are mortised at top for the reception of the pulleys over which the ropes pass.

B B the two pulleys, which are cast iron, 9 inches diameter. They are enclosed with pieces of wood nailed on the back of the posts, with corresponding mortises, so as to prevent the ropes getting off.

C C two free stones, having iron rings run into them with lead for fixing the ropes to. They are of a long round shape,

to prevent rubbing on the posts; and are, together, the exact weight of the gate.

D D two stays of home-grown fir, 5 inches diameter each, and round; bolted at top to the edges of the posts, and at bottom to two stakes drove into the ground, to prevent any thing displacing the posts, or the wind having effect on the gate when open.

E E the stakes, placed at such an angular distance to the sides, as to be out of the way of carriages, and at the same time to keep the gate and posts perfectly steady.

F the lintel, which, in the figures, appears only single, but in fact is double. I constructed it so, because I was afraid that the gate would not get high enough; and I had an idea of making the gate go up between the two, by placing the ropes a good way down on the sides of the gate, as is done with window sashes: but this I find I have no occasion for.

G, the gate, which, in fig. 1st, is seen shut, and in fig. 2d open.

H H, two pieces nailed on one side of the gate-posts and on one of the lintels, to prevent them getting out of their rectangular position.

I, a bit of string that hangs from the bottom, and at the middle of the gate, to lay hold of to shut it. This does not interrupt the passage in the least.

K K, the enclosing walls.

The gate and posts are not placed in a line with the walls, but at one side, as seen in fig. 3d, that the counterbalancing weights may descend to the ground, which they could not do if in the line. In building new walls, a place for the weights might be left.

On the flat face of the posts are nailed four slips of wood, to retain the gate. If one of them be taken off, the gate will come out. The gate is quite easy, both between the posts and the slips. The posts and stakes are surrounded with large stones, to prevent carts touching them. An iron pin is attached to the gate. It is put into one of a row of holes (according to the height required) in one of the posts, to keep the gate shut. If the gate is wanted fully open, it is let go from the hand with a very little force. The gate, lintels, slips, and angular pieces, are Norway timber.

The following occur to me to be the advantages of this gate.

1. It is very easy to open or shut.
2. Remains in whatever position it is placed.
3. Is not liable to be beat to pieces by the action of the wind.
4. Shuts always perfectly close, whatever be the height of the straw or dung in the court or gateway.

5. A cart may be driven quite close on either side, before opening.

6. Is perfectly out of the way when fully open, and not liable to shut on what is passing.

7. The gate bottom not liable to decay by being immersed in the dung, as is commonly the case with cattle-court gates.

8. So far as I can judge from the short trial, not liable to go out of order.

9. The posts, by being so firmly fixed, cannot be drawn out of position or place even by a two-horse cart, suppose it were to touch them.

10. May be erected in a hollow place, where a swinging gate could not open either outwardly or inwardly.

11. Cannot be twisted, the slips keeping it always in the proper position.

12. From the above advantages, likely to be more durable than ordinary gates, particularly if the bottom of the posts were protected from the putrefying action of the dung, which might be easily done.

Estimate of the Expense.

	£	s.	d.
Smith work and nails	0	10	0
Pulleys	0	2	0
Norway timber for gate slips, lintels, and angular pieces	0	15	0
Home-grown fir for posts, stays, and stakes	0	5	0
Stones for weights	0	1	0
Ropes	0	2	0
Wright-work, 4 days, at 2s. 6d.	0	10	0
Mason, half a day	0	1	3
	£2	6	3

The above does not include any thing for the carriage of materials, which a farmer has always at command, and in such a small erection cannot be counted, unless sent for on purpose.

I am of opinion this gate may be improved, and applied to many other purposes. I am, Sir, your, &c.

ALEX. CLARK.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Landsurveying, in Answer to Mr Parkinson.

SIR,

IN a former Number of your Magazine, you had the goodness to insert a query which I sent on Landsurveying. In

that paper, I pointed out the uncertainty which generally prevails respecting the measurement of sloping grounds, the careless or inaccurate manner in which such measurements are often taken, and some of the evils which proceed from the obscurity in which the subject is involved. Although I know that many farmers, and even landlords, are uncertain 'whether the measurement of the base of sloping arable grounds, or of the surface, is according to law;' yet it never occurred to me that the law was not quite explicit on the subject. I therefore expected the question to be answered by some of your legal correspondents; and I knew of no channel through which such important information could be conveyed so readily to those interested, as 'through the medium of the Farmer's Magazine.'

While I acknowledge the obligation I lie under to your correspondent Mr J. Parkinson, for the notice he has been pleased to take of the query I made, I am sorry to be under the necessity of stating, that his reply does not seem to me so explicit as the nature of the subject demands. He indeed informs us, that 'the only legal way of taking dimensions, is the horizontal method, whether the surface be even or not.' I have no reason to dispute the correctness of this assertion. I even stated in my last, p. 411, No. 80. 'that many surveyors believe Base measure to be legal, may be inferred from their attempting to contract the stretch of the chain on steep lines;' but when Mr Parkinson asserts that '*every practical surveyor*' is able to answer the question, I must inform him, that a late eminent writer on Surveying (Croker), gives reason to think, that he would have answered it in a different manner; and, very unluckily, the illustration which Mr Parkinson offers respecting the number of plants or trees that may grow on an uneven surface, flies directly in the face of his own assertion. Taking it for granted that his illustration is correct, and that a greater number of trees or plants (say oats) will grow on an uneven surface, then, why is horizontal measure the 'only legal' dimensions? Has the law lent its authority to this measure for the sole purpose of accommodating mappers and planners?—or does Mr Parkinson think it impossible to give the exact *surface* dimensions of steep grounds, and at the same time to reduce the hypothenusal lines to confine the map or plan within its just boundaries?

Whatever difference of opinion may exist with regard to the measurement of sloping grounds, there can be only one opinion respecting the number of trees or tall plants which grow on steep sloping banks, and which number will be always found to correspond with those which could grow on the base of such banks, at the same distance plant from plant. 'The terrestrial

globe,' it is true, 'is surrounded by infinite space;' but it so happens, that there are many inequalities on the surface of the globe; and it must be observed, that plants grow for the most part perpendicular to the horizon. If Mr Parkinson, however, could oblige them to grow perpendicular to the *surface* of steep grounds, then would they find 'ample room, in infinite space, to come to perfection.' Till this is done, the stems of trees or tall plants will actually be nearer each other than their respective roots, in proportion to the sloping nature of the ground.

The remark which Mr Parkinson thinks necessary respecting careless surveyors, is, I am sorry to say, quite as unsatisfactory as his other statements. What method is a farmer to fall on, to find out whether his farm be actually surveyed or not? Is he to do it himself, or hire another? And if this second one shall not bring a proper instrument for reducing hypothenusal lines, he is as likely to be wrong as the first, if Base measure should be taken. And what consolation can it give to the farmer, though the poor fellows lose their business? He may, in the first place, be led into an unpleasant litigation with his landlord; for it is possible that a clause in his lease may hold him satisfied as to measure before his entry; and every one knows that, in offering for a farm, an opportunity for ascertaining correctness of measurement seldom occurs.

My object in troubling you with a former paper, was to direct the attention of farmers in general to a subject in which they are much interested, and on which much uncertainty prevails. Though Mr Parkinson's *name* may be quite sufficient to support his *ipse dixit* respecting legal measure amongst those who have the honour of his acquaintance, yet, if he had stated his *authority*, it would have been more satisfactory to many of your readers. Whenever Mr Parkinson can convince me that my name can be of any importance to the public, it shall not be withheld. Till then, I must beg leave to subscribe,

Sir, your obedient Servant,

G.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Method of cultivating Wheat on a Clover Ley in East-Lothian.

Sir,

Observing a letter in your Magazine for February last, from Yorkshire, signed *Arator*, detailing his unsuccessful attempts at raising wheat after a clover ley; and wishing to be in-

formed of the proper method of attaining, what may with justice be termed, a desirable object, I shall, with your permission, furnish such information on the subject, as has been confirmed by repeated experience.

Before saying more, it is necessary to premise, that wheat ought not to be sown after ley, unless the ground is both clean and fertile; if otherwise, a crop of oats, in every situation, is greatly preferable. Taking it for granted, that your correspondent's ground is of the former description, it is stated for his guidance, that on the farm with which the writer of this is connected, some *grass wheat* is always sown; and the management is thus.—A moderate dose of dung is given, from 10 to 15 double-horse carts * per Scotch acre, more or less according to circumstances. The dung is applied so soon as frost sets in, and the land sufficiently hard to prevent poaching from the horses and carts. Again, when a thaw prevails, the ley is ploughed with a tolerably deep furrow, that none of the manure be uncovered, but *never* sown till spring, say the month of February, or even the beginning of March, should the weather not permit the seeding process to be executed in a perfect manner sooner. The advantages derived from spring-sowing are, that the ground may be meliorated and reduced by frost, and likewise thereby cleared of grubs and worms, with which grass land is generally infested.

Now, under the system above mentioned, I aver confidently, that wheat is a pretty sure crop. In fact, on an average of years, it is not much inferior to that crop upon the best prepared fallows, and in some years superior, as the seasons of 1816 and 1819 (the former of which was a singularly bad crop) clearly exemplify.

The chief objection to Arator's mode of culture, (and it is a great one, especially if his soil is of a clayey or tenacious description), arises from ploughing up the grass at an early period, and sowing immediately thereafter. A similar way was at one time prevalent in this district; but, being generally followed by a failure of the crop, has been gradually relinquished, and spring-sowing substituted. The cause of this failure can be attributed to nothing else than the hardness of the land not allowing the plants to get a sufficient hold thereof before winter, and thus they were almost certain to be thrown out in the event of a severe black frost. It often happened, too, that much of the wheat was destroyed by slugs and worms, thereby rendering the produce but scanty. Neither of these evils need be appre-

* A cart-load is something like a ton.

hended from sowing in spring: Hence the utility of sowing grass wheat at that advanced period of the season. Arator will attend to this, namely, that more seed is required for spring than autumnal sowing; for this obvious reason, that the former does not stool or tiller so much as the latter. One-fourth more is generally allowed in the one case, than in the other.

I am, with best wishes, your, &c.

East-Lothian, March, 1820. A CLODHOPPER.

FOR THE FARMER'S MAGAZINE.

An Inquiry into Mr Ricardo's Theory of the Laws which regulate the Value of Corn and Gold. By Mr John Rooke.

"THE value of Corn," says Mr Ricardo, "is regulated by the quantity of labour bestowed on its production, on that *quality* of land, *or* with that portion of capital, which pays no rent." This passage may be taken either as two propositions, or as only one. In my opinion, whether we view the above as constituting two distinct propositions, or one, it leads to incorrect principles, and very different from those which regulate the value of corn and rent.

In a country like Great Britain, which has been for some time highly peopled, labour and capital are applied to little or no land but what yields annual rent also. Though this able and distinguished writer has stated his views in a logical and well defined manner, yet, in respect to what regulates the value of corn, they come no nearer the truth, than that it must be the last and finite portion of that commodity added to the general stock, which, *in some way or other*, regulates the value of farm produce.

If we call to mind the rich and alluvial soils on the banks of the river Nile, the Ganges, or the Euphrates, it would appear, that the application of more skill, industry, and capital, than are there employed, would increase both the annual produce and the rental, without bringing into cultivation any inferior land. It is obvious, on these rich alluvial soils, when industry, skill and capital are employed in their cultivation, every inch of land is capable of affording annual rent; and that the value of corn is regulated by that portion of labour and capital which will not afford any returns of the nature of rent; that is, the *first* portion of labour and capital employed upon almost every description of land always affords rent; but the second or *last* portion

of labour and capital never affords any rent, even on the very best land.

Therefore, on almost every description of land, in countries highly peopled and cultivated, rent makes a component part of the whole produce; and the value of corn is regulated by that portion of labour and capital which yields no rent upon soils in general. Thus, suppose a tenant agreed to pay annual rent, not by the quantity of land, but by the quantity of labour and capital he employed in cultivation, he would only apply that portion of them which always affords rent; and that last portion, which never affords any returns of the nature of rent, would be unemployed. A tenant might afford to make roads, erect hedges, drain wet land, purchase manure, soil his cows, use various new and improved implements, clean drilled crops, &c., and yet he might be unable to afford rent in return for the advantages he derived from any one of these applications; and therefore, in case it were so, they would constitute that last portion of labour and capital which never affords any rent, and which regulates the value of corn.

It would then appear correct to say, that the value of corn is regulated by that last portion of labour and capital bestowed upon its production, *on every description of land*, which affords no rent, and for which *demand calls forth a supply*. The inferences deducible from this proposition are materially different, more extended and comprehensive, than the erroneous and defective views of Mr Ricardo. In fact, it may be considered as a consequence arising out of that train of primary relations, on which political economy rests its natural basis; first, the food and shelter necessary to human support; secondly, that combination of industry, capital and skill, applied to land without returning any rent, and to the procurement of remaining necessaries; and, thirdly, the natural limitation to the annual produce of the soil, in relation to the wants of man, and the industry, capital and skill employed in their supply.

The interests of every class in society depend upon the nature of this triple union; and, in proportion as its separate parts are more nicely adjusted and improved, so will the condition of man be ameliorated, by the more effectual application of labour, capital, and skill. Rent, it must be remembered, is that overplus which remains after both the labourer and the capitalist are satisfied. In proof of the good effects arising out of this natural union of interests, we find, even the indigent, in social life, more amply provided for than the monarch of a savage people.

The laws by which this practical good has been effected, is the result of social order, a proper and necessary gradation of

ranks, the accumulation of capital, the free and unrestrained cultivation of the soil, and that approximation of skill, acquired by reason, observation, and experience, which renders human labour and industry more productive.

Undoubtedly, the error of Mr Ricardo just pointed out may be very harmless, though its rectification may be necessary to the gradual march of correct science. If the erroneous views of this eminent author be harmless in one respect, they are quite otherwise with respect to the principles by which he attempts to eludicate the laws that regulate the value of gold.

Mr Ricardo contends, that 'it is *not* paper that regulates the value of gold as a commodity, but gold that regulates the value of paper.' On the basis of this position, he concludes, that 'a currency is in its *most perfect* state, when it consists wholly of paper money, but of paper money of an equal value with the gold which it professes to represent.' Surely it would be more correct to say, 'a currency is in its *most perfect* state, when it consists wholly of paper money, equal quantities of which put in motion equal quantities of labour at all times.' Such a currency, in my opinion, is attainable by the adoption of adequate, yet simple and easy regulations; namely, by the conversion of bank paper, at the will of the holder, into a greater or less quantity of gold, inversely, in proportion as the price of labour either rose or fell.

Neither a diminution nor an increase in the *demand* for gold can occur, without almost always affecting its value. Therefore, a single bank note cannot be added to, nor be withdrawn from circulation, without causing a rise or fall in the value of gold. It would appear, therefore, that bank paper and gold have a *mutual* tendency to regulate the value of each other. Suppose the circulating medium of Europe consisted of 160 millions Sterling in gold and silver, of which 100 millions consisted of gold, the value of that quantum of supply would be regulated by the demand; and demand, in relation to the immediate supply, would regulate what mines should be explored or given up; and the supply, so regulated, would again react upon the demand in future. But, suppose the nations of Europe should, to a circulating medium of 100 millions Sterling, add 20 millions of bank paper; in case the demand remained stationary—such an issue of paper could not be made without lowering the value of gold as a commodity, and cause less labour to be applied to the mines which yielded that metal. We cannot, therefore, doubt but the issue of a greater or less quantity of paper, is *one* of the principal causes which regulate the value of gold; and that a single note cannot be withdrawn from circulation,

for the purpose of lowering the nominal value of that metal, without enhancing the real value at the same time. If the nominal value were brought down 20 per cent. by the contraction of bank paper, such a process might enhance the real value 20 per cent. also; therefore, prices would fall 40 per cent. instead of 20.

From the year 1784 to the year 1807, the gradual and generally increased issues of bank paper throughout the great commercial republic, and the peculiar circumstances of commerce and currency, the value of gold in this country fell nearly 120 per cent., though its nominal value had been kept very little above 3*l.* 17s. 10½d. per oz. The non-conversion of Bank of England notes into gold in the year 1797, at the will of the holder; and the general diffusion of bank paper in many of the continental states of Europe, and in America, contributed to cause this great depreciation in its real value, and not the greater productiveness of the gold mines. From the year 1807 to the year 1814, owing to the peculiar contingencies of the war and commerce, though the nominal value of gold was depreciated nearly 30 per cent., yet its real value rose upwards of 40 per cent. Therefore, notwithstanding the increase of bank paper, and the consequent rise in the nominal value of gold, yet the value of the circulated pound Sterling rose;—that is, prices fell. Credit and bank paper, therefore, may often be the principal cause which regulates the real value of gold; and not the toil and labour of bringing it from the mine, as Mr Ricardo contends.

In my mind, Parliament, during the last session, committed a very great oversight in not taking into account the real value of gold, as well as its nominative value. While the latter may be lowering, or enhancing prices only 10 per cent., the former may be lowering or enhancing them to the amount of 20, 50, or 100 per cent. or more.

Akehead, April 3*d*, 1820.

*** We have given this communication just as we received it, under an idea that Mr Rooke, who, we understand, has lately written a good deal upon the same subjects, must be better acquainted with them than we profess to be ourselves.—Con.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Distemper among Horses, and other Animals, at New York.

Sir,

A friend of mine, who lately visited New York, has communicated to me the following account of a pestilential zoo-

tic which raged among the horses, cattle, &c. of that province. If you should judge it worthy of a place in your Magazine, you are at liberty to insert it.

"A curious distemper occurred lately in the State of New York, affecting the horses chiefly. The tongue swelled, inflamed, and at last broke out in blotches;—the inflammation extended to the palate, and part of the throat—no appetite—great falling off in flesh;—generally died in three or four days;—sometimes going off of itself, and then frequently affecting the feet with swelling, ulceration, &c.—sometimes cured by antiscorbutics. It affected horses at the first;—they infected sheep, black cattle, and even fowls—I don't think hogs.—Cause unknown.—Never heard of before.—Extending about a hundred miles each way."

It appears to me a question of some importance, to ascertain whether this disease was equally severe in all the different species of animals which it attacked; or whether it was milder in some, and more malignant in others;—as, by this means, some light might be thrown upon the interesting subject of the communication of diseases from one species of animals to another, with the view of lessening their severity.

Might not the disease, of which an account has been prefixed, become less malignant, in its transmigrations through the different species of animals; and, after having run its course through all of them, at last be rendered comparatively mild and innoxious?

Following out this idea, might not inoculation be performed with the virus taken from animals of that species in which the disease occurred in its mildest form, upon those animals which, in the natural way, are most severely affected, and a mild disease be the consequence, capable of preventing a return of the same malady?

I request your attention to these queries, in the hopes that they may some day be substantiated.

Aberdeenshire, 10th April, 1820. J. M.

FOR THE FARMER'S MAGAZINE.

Agriculture of the Val di Chiana in Italy.

[From a Journey in Carniola, Italy, and France, in the years 1817, 1818. By W. A. Cadell, Esq. F. R. S.]

The Val di Chiana is forty miles broad [long?] and seven to twelve broad, laid out in cultivated fields, divided into rect-

angular enclosures and squares, with ditches round every ten or twelve acres, and maples and elms, supporting vines, on the banks of the ditches.

It was converted into arable ground from the state of a marsh, by Cosmo I. in 1560, soon after he got possession of the territory of Siena; in which territory, half of the Val di Chiana is included. The Chiana, in its whole length, was confined between embankments; and then the streams that run into it were confined in a similar way.

The Val di Chiana is interspersed with considerable farm-houses, like gentlemen's seats, with extensive offices. Many of these are the property of the Grand Duke, to whom a great part of the valley belongs, and were built by the Grand Duke Leopold, who also constructed roads, bridges, embankments, and drains in the Val di Chiana, and in the Maremma of Siena, which has thereby become less unhealthy; and for these beneficial works, and for the good regulations he made, his memory is honoured in Tuscany.

Part of the Val di Chiana belonged formerly to the military order of San Stefano, which was suppressed by the French; and their territory is now the property of the Grand Duke. This order was in some measure reestablished by the Grand Duke in 1818.

In different parts of Britain we see as heavy crops as can stand on the ground; but they have, in Tuscany, a greater variety of produce, and can follow a more speedy rotation of productive crops—advantages which are owing to the warmth and fine weather of the climate. Tuscany is 120 English miles in length, on a meridian line from north to south, and 100 miles in breadth from east to west; but a great part of the surface is mountainous, and not susceptible of cultivation.

The farmers in the Val di Chiana, and in other parts of Tuscany, are steel-bow tenants, *coloni partiarii;* the whole produce of the ground being divided into two equal parts, of which the landlord gets one, and the farmer the other. The landlord is at the expense of manure, the repairs of walls and other fences, reeds and stakes for vines, agricultural implements, and live stock of oxen, &c. land-tax, and of keeping a steward or *fattore*, who collects and sells the landlord's share of the produce, —of buildings for keeping the grain and produce, and of houses, granaries, and stables for the farmer and stock. The farmer, on his part, cultivates the ground, and performs all the requisite labour; he also bears half the expense of seed, and some other articles.

In this mode of farming land, as in other cases where the rents are paid in grain, the value of the rent keeps pace with

the price of grain. The landlord is put to the expense of keeping a steward to sell the produce, which expense he does not incur in case of a fixed rent. Writers on Political Economy are of opinion, that this mode of letting ground occurs chiefly in countries where the farmers are not possessed of capital sufficient to purchase the stock necessary for the farm; and maintain, that it tends more to the improvement of agriculture, where the farmers are possessed of capital, and pay a stated rent.

In Scotland, it used to be estimated, that the rent paid to the landlord generally amounts to one-third of the total produce of the farm. Of the other two-thirds, one is employed in defraying the expense of stock and cultivation, and the other is the profit of the farmer. If it be supposed, that, in Tuscany, the landlord's expense on the farm is 16 per cent., or between a sixth and a seventh of his half share of the produce, then, his profit or clear rent, will be in this proportion of one-third of the produce.

[By a statement in figures, here introduced, it appears that the rent of a piece of ground, not remarkably fertile, near Siena, which was estimated to contain about an acre, and situated too far from the town to be benefited by its vicinity, was 4*l.* 1s. 8d. Sterling. Among the articles of the produce, are 250 quarts of wine.]

Land near Siena sells at 20 years' purchase of the nett annual profit, or free rent.

The mode of dividing the produce of the soil between landlord and farmer, was in use in Italy in the time of the ancient Romans. The farmers were called *coloni partiarii*; and are mentioned by Cato, and other ancient writers on Agriculture.

The system of the ancients, however, differed in respect to the slaves, whether saleable separately, or attached to the land, *glebæ adscripti*, who were employed in its cultivation. The ancient Romans had also land let at fixed rent, as had the Italians of the middle age, who employed, to denote this rent, the word *fitto*, from the Latin *fixus*, *census fixus*, written in the middle ages *census fictus*; and from this the modern Italian word *affitare*, to let.

Medietarius, in the middle ages, was used in the same sense as *partiarius*; and from *medietarius* is formed the French word *metayer*, which originally signified a steel-bow tenant; but is now applied to farmers of every kind, in whatever way their rent is allotted, and *metayrie* is a farm generally.

The oxen used in the plough in Tuscany, are very tractable, but slow. In the Val di Chiana, one pair, wrought by one man, ploughs an acre a day. This is done in eight hours, and the man works four hours more in other labours of the farm.

The ground, when prepared for seed, is as fine as garden mould.

The oxen in Tuscany are beautiful, large, of a grey colour, with fine deep chests, little bone, and, when fat for the butcher, at four years old, weigh seventy-five stones English, and sell for a price equal to 21*l.* Sterling.

At a great fair for the sale of those cattle at Cortona, an astonishing number were seen, beautiful, and in good condition. They have abundance of green food all the year.

Beef and mutton are sold in the market at Siena at fourpence Sterling, for a quantity equal to an avoirdupois pound. Pork, *majale*, is good, and fed entirely in the woods on acorns and some chesnuts. Wild boar, *cignale*, is plenty and good in the market at Siena, and is sold at fivepence Sterling for an avoirdupois pound.

Wheat is sown much thinner than in Britain, on broad drills, and the seed is covered in with hand-hoes. They sow wheat in the end of October and beginning of November, and reap in the beginning of July. The wheat is well filled, clear and hard. The farms are so small that they cut down the corn with the labourers usually employed, and have only occasion to hire one or two additional.

The country people, the *contadini*, cut down the crop usually in six days; and, during that time, they work very hard under the bright and elevated sun in July, from four in the morning till eight or nine in the evening, with only two hours of rest in the day. Most of the country people are small farmers; few of them are labourers only. The wages in the country ninepence—in Siena ten-pence a day.

After reaping, the corn is immediately thrashed out and laid up in granaries, which form part of the farm-houses.

Near Siena, they sow wheat every second year.

The usual return of wheat is twelve to fourteen after one; when wheat is taken two years successively, the second year's crop is somewhat less productive than the first.

The usual course of husbandry in the Val di Chiana, is, two years wheat, with a little manure each year. Then, after the second year's wheat is reaped, the land is ploughed, and turnips are sown; the turnips are off the ground by April. Then the land is dug, manured, and planted with Indian corn, beans, hemp; or, if the land is not manured, it is sown with kidney beans, lupines, a kind of clover, vetches mixed with oats, *lupinelli*: the three last are for the cattle; the lupines, after they have grown for some time, are generally ploughed in as manure.

The crop of turnips is great, and the turnips are of a large

size. It never freezes strong enough to injure them. The profit from Indian corn and hemp is greater than from wheat; but they both require more manure, and must be dug. The produce on wine is considerable; but the wine is of an inferior quality in most parts of Tuscany. Vines are planted on espaliers thirty or forty yards from each other, and corn is cultivated on the ground between them.

The Monte Pulciano, the most esteemed wine in Tuscany, is like a weak claret, with little flavour, and does not bear the voyage to England.

The profit on silk is also considerable. Of an estate in the Val di Chiana of 2500*l.* Sterling a year, 600*l.* of the rent was from the white mulberry trees called *gelsi*, and the rearing of silk-worms.

In many parts of Italy the proprietors of the white mulberry trees, which are planted as hedgerows in the cultivated fields, do not grow silk, but send the leaves to market, to supply those who have silk-worms.

All the fallows are well hoed. The wheat is sown in broad drills, and they often hoe between the drills. The wheat, when grown, is generally so strong as to leave no visible marks of the drills, and is higher than a man's height.

Although the ground is lower than the water in the rivers, yet the Val di Chiana is said not to be unhealthy. The countrymen never go out in the morning without eating bread, and drinking some wine. They look stout and healthy. The Val d' Arno di Sopra is considered to be equal in fertility to the Val di Chiana.

In the Val di Chiana, fields that are too low are raised and fertilized by the process called *colmata*, which is done in the following manner. The field is surrounded by an embankment to confine the water. The dyke of the rivulet is broken down, so as to admit the muddy water of the high floods. The Chiana itself is too powerful a body of water to be used for this purpose; it is only the streams that flow into the Chiana that are used. This water is allowed to settle and deposit its mud on the field. The water is then let off into the river at the lower end of the field, by a discharging course called *scolo*, and, in French, *canal d'ecoulement*. The water-course which conducts the water from a river, either to a field for irrigation, or to a mill, is called *gora*. In this manner a field will be raised five and a half, and sometimes seven and a half feet in ten years. If the dyke is broken down to the bottom, the field will be raised the same height in seven years; but then, in this case, gravel is also carried in along with the mud. In a field of twenty-five acres, which had been six years under the process of *colmata*,

in which the dyke was broken down to within three feet of the bottom, the process was seen to be so far advanced, that only another year was requisite for its completion. The floods in this instance had been much charged with soil. The water which comes off cultivated land completes the process sooner than that which comes off hill and wood lands. Almost the whole of the Val di Chiana has been raised by the process of *colmata*.

A proprietor whose field is not adjacent to a stream, may conduct the stream through the intervening lands of another proprietor, on paying the damage he occasions. The process of *colmata* is expensive, because the ground is unproductive during the seven or eight years that the process lasts; but this is soon repaid with great profit, by the fertility of the newly deposited soil.

By the gravel which the rivers carry and deposit, their bed is much raised above the level of the adjoining fields; so that, in order to carry off the rain water from the fields, drains are formed, which pass in arched conduits under the embanked rivers, and go into larger drains, which pass to the lowest part of the plain near Arezzo, and there enter the Chiana.

The soil in the Val di Chiana is generally the same to the depth of six feet from the surface, and under that is gravel or sand. After the completion of the process of *colmata*, the expense of which is always repaid with profit, the ground is cultivated for five years on the proprietor's own account; and the produce during these five years repays the expense of the process of *colmata* with profit. The two first years it is sown with Indian corn (*gran turco*), and sometimes hemp, the soil being then too strong for wheat. The next three it is sown with wheat, without any manure. The produce of wheat in this highly fertile state of the soil, is twenty from one; whilst, in the usual state of the ground, the return of wheat is from twelve to fourteen after one. After this the field is let out in the ordinary way to the farmers, the *contadini*.

An operation similar to the *colmata* has been practised near Gainsborough.

FOR THE FARMER'S MAGAZINE.

Parmesan Cheese-Dairy.

[From a Journey in Carniola, &c. by W. A. Cadell, Esq. F. R. S.]

"On the 14th April (1818), I went to see a large cheese dairy, three miles from Milan, one of the dairies at which that

kind of cheese called in commerce *Parmesan*, is made. It is called in Italy, *Formaggio di grana*, because it is commonly used in a granular form, being grated, and brought to table to be eaten with soup. Much of this cheese is also made near Lodi and Pavia.

The word *Formaggio* is from *Formaticum*, which signifies, in the Latin of the middle ages, cheese prepared in a form.

The cheese is made in the morning before sunrise.

The morning's milk, and that of the preceding evening, are put into a large brass vessel, five feet in height, narrow at bottom, and widening out like a trumpet to three feet diameter at top. This vessel is placed over a fire, which is sunk in the ground, and the vessel can be removed from the fire by a crane.

When the milk is heated, runnet, in form of paste, is put in, and a little saffron, to give the cheese the yellow colour.

When the coagulation has taken place, the copper is taken off the fire, the curd is taken out in a cloth, and put within a broad wooden hoop, the sides of which are as high as the cheese is intended to be. This hoop can be straitened by means of a rope. A board is placed on the top of the cheese, and a small weight on the board. The cheese is not put into a press.

After this, the cheese is taken to the salting room, and two cheeses are placed together, one above the other, with broad hoops tightened round them. Much salt is laid on the top of the uppermost cheese; the salt dissolves, and the brine filters through the cheeses.

The cheeses are shifted from one place to another all along the benches of the salting room, and are beaten with a flat piece of wood, cut with straight-lined furrows intersecting each other.

The cheese is next taken to the magazine, where each cheese is placed on a shelf.

The sides of the cheese are painted with a mixture of litmus, otherwise called *tournesol*, and oil, to give them the purple colour. The tournesol is a plant collected in the south of France.

The cheeses are set on the shelf in the same order in which they were made; and the cheeses of each month are placed together.

Those of the month of October and of May are the best, and bear the highest price. The best cheeses can be kept longest, and are improved by keeping for some years.

There was an October cheese which had been kept five years, and was to be sent to the Emperor.

After the great cheese is made, the liquid in the copper is again heated over the fire, and curd is collected from it to make small cheeses, called *Mascarla*.

The number of cows kept for making cheese in this dairy is eighty. They are always in the house in winter, and at this season of the year. They are fed upon grass all the year, except perhaps in December. The house in which they are kept is not above nine feet high to the ceiling. They are not kept very clean. In summer, they go out to the field to feed during the day.

The cows are of a dark colour, and are brought from Switzerland, which is found more profitable than rearing them in this country. The bull is also Swiss, and fourteen months old.

It is estimated that 2000 head of cattle pass the Mount Saint Gotthard every year, coming from Switzerland into Italy. Considerable fairs for the sale of Swiss cattle are held at Lugano.

The evening's milk is put in flat copper vessels, three feet in diameter, in order to collect the cream.

There is an ice-house at the dairy, for the purpose of supplying ice for cooling the cream which is put into the churn. This they find facilitates the making of butter at certain seasons of the year.

In the farm-yard is an inscription, commemorating the visit paid to this dairy by the Austrian Emperor and the Archdukes, two years ago."

FOR THE FARMER'S MAGAZINE.

The Creed of improved Circulation; explanatory of the Principles of the new System of Currency; and proving, 'That the Distresses of the Country, are principally owing, to our returning to a Circulation,—in amount, inadequate to our wants, and of foreign extraction." By SIR JOHN SINCLAIR.

1. THE price of the property, and of all the commodities produced by the labour of a country, depends upon three circumstances;—the amount of the supply, or quantity for sale;—the extent of the demand, or quantity to be purchased;—and the amount of the currency, or the circulating medium, by the actual delivery of which, or obligation to deliver it, the property of the article is transferred from the seller to the buyer. *

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* Prices are the results struck out by the contact of currency with property in the markets. Both are necessary to make a price. The abundance of currency in the markets (or plenty of money), has the very same action *in raising prices*, as the scarcity of property has;

2. No nation can carry on a prosperous agriculture,—flourishing manufactures,—an extensive commerce,—and can furnish, at the same time, an immense revenue,—unless its currency, or circulation is sufficient for the public wants;—and it is much more politic, to err on the side of abundance, than that of scarcity.

3. It is highly important, not to be dependent on foreign countries for the materials of circulation, beyond the smaller payments. The experience of this country, for above twenty years, proved, *beyond the possibility of doubt*, that a circulation in gold, is, in no respect, essential, and far less indispensable, for insuring national prosperity. When was Great Britain either so rich at home, or so powerful abroad, as during that period (from 1797 to 1814), when it had not an ounce of gold in its Treasury, nor a guinea paid to the Exchequer? It then possessed, an abundant, and an accredited circulating medium, (that solid basis of national prosperity), WITHIN ITSELF, independent of foreign aid, and of which it could not be deprived by foreign manœuvres, to which a circulation in coin is liable.

4. A currency possessed of what is called *intrinsic value*, is necessary in times of ignorance and barbarism, being in fact a species *of barter;* but it is not necessary, where a regular government is established,—where confidence exists,—and where a *representative currency* is sanctioned by public opinion. The one, also, occasions an immense expense; while the other produces a considerable addition to the revenue. *

5. The system of *representative currency*, regulated in its amount, and issued on the credit of solid property, though at first a mere temporary expedient, has proved '*the greatest*

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and the scarcity of currency in the markets (or want of money), has the same action, *in lowering prices*, as the abundance of property has. Hence it is evident, that the one is as necessary as the other, in the process of raising, or lowering prices. (Remark by Mr Attwood of Birmingham).

* The precious metals which are to be converted into coin, must, in the first place, be paid for. That is attended with an immense expense. But that is not all. The expense of keeping up the coinage, and supplying all its deficiencies, since the Revolution in 1688, if it were accumulated at compound interest, would pay above *One hundred millions* of the national debt. In the reign of King William alone, the charges of the recoinage amounted to above three millions. The sum which the public has received from stamps on notes, if likewise accumulated at compound interest, would be very considerable. What a contrast between the two sorts of circulation!

political discovery of modern times.' * The reason is obvious. Metallic money produces no new capital. Being purchased from other countries, it is only the old national capital replaced in a different shape. Whereas paper money furnishes, without expense, a new and additional circulating capital, which can easily be produced in every part of a country, and which consequently possesses an universal, as well as a most active influence.† Under the latter system, therefore, a nation may be happy and powerful, which would often be miserable, or at least incapable of any great exertion, if it depended exclusively on a circulation in coin, which is expensive, fluctuating, and migratory, and consequently often inadequate;—or on a paper currency, convertible into gold, at a low estimated value, which evidently tends to render a country poorer, by diminishing the value of goods. ‡

6. It is a strong symptom of public misery, when the precious metals are at a low estimated value. When they are considered to be *the cheapest*, they are in fact *the dearest*. Though they fall *in price*, yet they rise *in value*. Hence they command more labour, and will purchase a greater quantity of goods, of every description, than when they are nominally dearer. It is

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* The great discovery was this, 'That a limited paper circulation, founded on solid property, rendered a circulation in coin, 'for the larger payments, totally unnecessary.'

† See a most valuable work, in one volume 4to, entitled, 'The 'Happiness of States,' written by S. Gray, Esq. printed for Hatchard and Son, and Longman and Company of London, in which many important political questions are most ably discussed.

‡ If certain *theorists* insist on the necessity of a currency, having *intrinsic* value, *practical men* will prefer a medium of circulation, *representing solid property, limited in its amount*, and which, if it is thought necessary, might be rendered convertible into coin or bullion, *at their average marketable value.*

The price of gold, *at the mint*, ought to rise with other commodities; and to force the price of all other commodities, to the old standard price of gold, is as unjust, as it would be to ordain, that cattle, horses, and every other commodity, should only fetch the same price they did a century ago, without paying any respect to the changes of times and circumstances. (Remark by Thomas Attwood, Esq. of Birmingham.) The ounce of gold is now made the standard of value, and of course it will hang like a millstone upon the neck of our currency, until it has forced down the prices of property to a level, which shall give it the same value, in exchange for commodities and labour, as it possesses in other countries. (Remark by Mr Attwood.) What then will become of the Revenue? *and of the Landed Interest?*

much better to have *a single article*, as coin, depreciated, than every other article reduced in value, more especially when a country is loaded with debt, and is under the necessity of furnishing an immense Revenue.

7. Nothing occasions so much distress in a country, as diminishing, to any extent, the amount of its circulating capital, or currency, after it has been acted upon for some time. By such a diminution, the value of goods is materially decreased, and thousands of respectable individuals, who ought to have been in a rich, or at least in a comfortable state, are, as if by magic, without any fault of their own, reduced to poverty. Nor can it be otherwise, since the value of lands and houses, when sold, —their rent, when they are to be let,—and the price of 'ALL COMMODITIES,' whether of a mercantile, or agricultural description, must fall, when the circulation is diminished.

8. In order to render a paper circulation efficient, it ought to be, as little as possible subject to fluctuation in amount. Hence a large proportion of the circulation of the Bank of England, the basis of our paper currency, ought to be invested in permanent loans to the public. By an additional permanent loan from the bank, negociated in the course of the year 1817–18, the amount of '*Legal Tenders*' was increased, from about 25, to above 30 millions. Money was thus rendered abundant; —the rate of interest was reduced;—the value of property, whether in land, in houses, or in the funds, and the price of all sorts of consumable goods, was augmented;—and there was every symptom of returning prosperity. *

9. It is much better that a paper circulation should be issued by opulent corporations, or responsible private companies, than by the government,—even though the public pays interest for paper, which, without its sanction, could not be circulated. The issues of a bank may be controuled, but it is hardly possible to limit paper issued by the government; yet *judicious limitation*, is the great secret of an advantageous paper currency.

10. In no country can the laborious classes, (more especially when population is rapidly increasing), be sufficiently employed, unless the circulation is abundant, and capital attainable. It is contrary to the plain dictates of reason, and of common sense, that men can employ others, unless they have money at command to pay them; or that labourers can exist, without receiving regularly their daily, or weekly wages, *in money*, neither

* Whoever will compare the state of this country in the year 1817–18, and at any period since, will soon be convinced of the advantages of abundant circulation, on a *permanent footing*.

of which may be practicable with a diminished circulation. Hence a stagnation of industry arises, and an inability to employ numerous bodies of labourers and mechanics for productive purposes.

11. One of the miseries of a deficient circulation is this, that there is '*no* DEMAND *for goods*;' nor are articles in general purchased, *unless for immediate consumption*. Goods of course fall in value; commerce and manufactures languish; agriculture is depressed; and credit cannot be depended on as a resource. When money is scarce, more profit is to be made *by usurious*, than by trading transactions; whereas, with an abundant circulation, *a store of goods* will probably pay better than a store of money; and transactions, connected with the productions of agriculture, of manufactures, and of every branch of commerce, (both foreign and domestic), are constantly carrying on. †—Hence a general state of prosperity arises.

12. It is quite a mistake to suppose, because considerable misery is felt, when circulation is at first diminished, that the distress will soon be over. The revenue may not *at first* be materially affected by it, because, while the people have any property to lay hold of, they may be compelled to pay their taxes. But, in fact, if they are to pay the same taxes, with a currency diminished one half, *the burden is nearly doubled*. ‡ The burden of the public debt also, is thus greatly increased; §—all private debts and obligations, of various descriptions, are like-

† It is proper here to remark, that the commercial distresses of England, *the centre of general commerce*, soon spread over every other country, and reacted again upon itself. Had the prosperity of England been kept up, foreign countries would not have experienced the calamities they suffered. Those who, from national jealousy, rejoiced in our distresses, little thought how soon they would be themselves implicated in them.

‡ In the debate in the House of Commons on the finances of the country, on the 7th of June 1819, the new taxes were objected to, because, according to Mr Tierney, the alteration in the value of money was, in itself, a tax; and as, in Mr Brougham's opinion, the return to cash payments would diminish rents, or incomes depending on landed produce, from 5 to 10 per cent. But Mr Attwood maintains, that to reduce the prices of property to one-half of their regular amount, is to double every man's debt, and to halve his property.

§ It is calculated, that the public would, in many cases, be compelled to pay 500 ounces of gold, (if the 3 per cents. were at par, and gold at the mint price), for commodities, the value of which *in gold*, at the time the transaction took place, did not exceed from 150 to 200 ounces.

wise doubled in effect;—the sinews of reproduction are destroyed;—industry becomes torpid for want of capital to give it animation and life;—and the whole country is involved in distress. Unfortunately, also, that distress is not diminished by time, but

'Vires acquirit eundo.'

These propositions seem to be incontrovertible. No man will rejoice more, that they could be proved erroneous, either by arguments or by experience, than the person by whom they have been drawn up. On the other hand, he is convinced, 'That nothing can relieve the existing distresses of the coun-'try, but *an abundant circulation*, founded, not on *intrinsic*, but 'on *representative*, value; and the materials of which are, *not* '*of foreign, but domestic extraction.*' The proposition of the Bank, * by which it offered to pay its notes in coin or in bullion, at the average price of the metal fixed on as the standard, † for the three months preceding the date of the demand, might likewise be acceded to. To facilitate that operation, the market price of the precious metals, for the three preceding months, ought to be weekly stated in the Gazette. At present, since the 1st of February last, the Bank has been bound to pay the value of its notes *in ingots*, at the rate of 4*l.* 1s. *per* ounce. On the 1st of October 1820, ingots must be delivered, at the rate of 3*l.* 19s. 6d *per* ounce, and on the 1st of May 1821, at 3*l.* 17s. 10½d. ‡ On the 1st of May 1823, it is bound to pay *in coin* at

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* See Lords' Report on the Bullion Question. Appendix, p. 314.

† In regard to the metal to be fixed upon as a metallic standard, *silver* is, in every respect, preferable to gold. It cannot be so easily hoarded, (an essential quality in an article *intended for circulation*);—it is less subject to variation, by at least six *per cent.* (a most important circumstance, *as a permanent standard*);—it is indispensable for the smaller, and, consequently, the more numerous payments;—it is harder than gold, and, of course, less liable to wear;—it cannot be so easily, or so profitably melted down;—it cannot be exported but at a greater risk, and with heavier charges;—all accounts, in this country, are kept in pounds and shillings, or in reference to silver;—it is the general legal tender in Europe and America;—it is the proper medium for calculating the rate of exchange with all other commercial countries;—and, in the event of a scarcity of silver, it would be much easier to have the vacuum made up, by inducing persons to part with their silver plate, than could possibly be done, if a scarcity of gold were to be supplied. With such strong arguments in favour of silver, why should gold be preferred as the permanent metallic standard?

‡ On this subject, Mr Gray, the author of 'The Happiness of

that rate, the restriction being at an end. § How far such a plan is practicable, and what consequences will follow from it, can only be ascertained by experience. The result, in the apprehension of the author of this paper, must be in the highest degree injurious, if the plan can be at all carried into effect. *It evidently appears, that it is quite impossible, under that system, to raise a revenue adequate to the public necessities.*

133. *George Street,*
5th April, 1820.

FOR THE FARMER'S MAGAZINE.

Scotch Farming near London.

FOR the following communication we are also indebted to SIR JOHN SINCLAIR. It is merely an estimate, indeed, not the result of practice; but every thing seems to be fairly, and, perhaps, moderately stated; and the farmer who is about to act upon it, observes that all the crops are now raised in his neighbourhood, though not in the order he means to adopt. He ought, therefore, to know their value, and the expense of cultivating them; and at any rate, the paper is interesting, in so far as it makes us acquainted with the views of an intelligent man, regarding the mode of farming that may be found to an-

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States,' very justly remarks, that paper money, regulated by the demand, is infinitely preferable to the metallic. That the latter tends to create stagnation, whereas the former tends to animate commercial intercourse,—to increase employment,—and to procure, for the various classes of circulators, profitable prices. If metallic is to be connected with paper money, it should be, not at a fixed or *artificial* price, but at the natural price, namely, the market price of the day: Or, to remove every possible objection, let there be '*a fixed maximum rate of convertibility,*' say, not exceeding 4*l.* 10s. in time of peace, and 5*l.* 10s. in time of war. That would effectually check inordinate issues. Mr Attwood has proved, (Farmer's Journal, 10th April 1820), that by a forcible reduction of the value of gold to the old mint price, (instead of considering that metal as merely an article of merchandise), and making it, at that low price, the sole standard of value, we impose *a duty* on the export of our domestic manufactures, while we give *a bounty* on the importation of foreign grain. No wonder that general distress should be the consequence of so impolitic a system.

§ See the act 59. Geo. III. cap. 49. passed 2d July, 1819.

swer within a moderate distance of the great market of the metropolis. We shall be glad hereafter to compare his experience with his estimate, if he will furnish us with the means. There is an error in the summation of the Produce, which makes it too much by 3*l*.—Con.

Estimate of the Annual Produce of a Farm of 90½ *English Acres, (Tithe free, and situate* 18 *Miles from London.)*

To 21 acres Potatoes, 7 tons an acre, at 3*l*. 10s.			L. 24	10	L. 514	10 0
— 21	—	Wheat, 26 bushels. at 76s. per qr. -	12	7	259	7 0
— 10½	—	Clover, 2 loads (two crops), at 4*l*. 10s.	9	0	94	10 0
— 6	—	early Potatoes, 4 tons, at 4*l*. -	16	0	96	0 0
— 3	—	do. Peas, 24 sacks, at 9s. -	10	16	32	8 0
— 1½	—	Winter Tares - -	8	0	12	0 0
— 21	—	Oats, 7 qrs. at 30s. - -	10	10	220	10 0
— 1	—	Grass or Meadow - - -			5	0 0
— 5½	—	Hedges, Ditches, Roads, Buildings, &c. -			–	– –
90½ acres		- - - -			L. 1234	5 0
— 10½	—	Turnips after early Potatoes, Peas, and Tares, at 5*l*. - - - -			52	10 0
— 10½	—	do. after oats (dunged, and made Potatoes after), at 2*l*. - - - -			21	0 0
— 10½	—	Rye after do., to be ate with sheep on the ground, 1*l*. - - -			10	10 0
— 42 loads Wheat Straw, sold at 36s. a load -					75	12 0
— 42	—	Oat do. (used by sheep in yard and litter, &c.), at 10s. - - - -			21	0 0
— profits on Pigs kept on offal potatoes, &c. -					10	10 0
					L. 1428	7 0
Deduct annual expense - -					1095	12 3
For keep of family, interest of capital, and profit -					L. 332	14 9

Estimate of the Annual Expense of the above 90½ *Acres.*

To rent of 90½ acres, at 60s. per acre -	L. 271	10 0
— poors' rates, 22*l*.; church ditto, 2*l*. - -	24	0 0
— assessed taxes—6 horses, 5*l*. 5s.; window tax, 2*l*. 16s. -	8	1 0
— insurance on buildings and stocking - -	2	0 0
— keep of 6 horses, at 37*l*. per annum each - -	222	0 0
— 3 ploughmen, at 13s. a week, 33*l*. 16s. per annum -	101	8 0
— a boy at 3s. a week - - -	7	16 0
Carry over	L. 636	15 0

Brought over -	L.	636	15 0
To 21 acres couching for potatoes, at 3s. an acre -		3	3 0
— Dung filling and spreading for do., at 5s. - -		5	5 0
— 21 acres potatoes, plants cutting and dropping for do., at 6s. per acre - - -		6	6 0
— hoeing and weeding ditto, at 5s. - -		5	5 0
— taking up and pitting ditto, at 25s. - - -		26	5 0
— sorting and weighing ditto for sale, at 14s. -		14	14 0
— 21 acres wheat twice hand-hoeing, at 9s. - -		9	9 0
— do. reaping, at 14s. - - -		14	14 0
— do. carrying, thrashing, dressing, &c. at 12s. -		12	12 0
— 42 loads wheat-straw binding for sale, at 2s. 3d. -		4	14 6
— 6 acres clover twice mowing and making, at 15s. -		4	10 0
— do. thatching hay, binding, &c. - -		1	10 0
— 6 acres early potatoes, planting, taking up, sorting, &c. at 50s. - - - -		15	0 0
— 3 do. early peas, hoeing and earthing up, at 9s. -		1	7 0
— do. picking for market 24 sacks, at 2s., 2*l.* 8s. -		7	4 0
— do. reaping and carrying, at 5s. 6d. - -		0	16 6
— 1½ acres tares hand-hoeing, at 5s. - -		0	7 6
— 10½ — couching for turnips (after potatoes, peas, and tares), at 3s. - - -		1	11 6
— dung filling and spreading for ditto (or say potatoes, &c.) at 5s. - - -		2	12 6
— turnips hoeing, say 10½ acres, at 10s. - -		5	5 0
— 10½ acres clover, dung or ashes, filling and spreading for do., at 4s. - - - -		2	2 0
— stones picking off do., at 2s. per acre -		1	1 0
— 21 acres oats twice hand-hoeing, at 8s. - -		8	8 0
— do. reaping, at 12s. - - -		12	12 0
— do. carrying, thrashing, dressing, &c. at 12s. -		12	12 0
— 10½ acres stubble turnips (say part cabbage and Swedes) hoeing, at 6s. - - -		3	3 0
— hedges and ditches repairing, dung turning, &c. &c.		10	10 0
— 120 one-horse carts of turf ashes, at 2s. 6d. -		15	0 0
— 90 waggon-loads (or 180 two-horse carts) stable-dung brought from London, at 9s. - -		40	10 0
— tolls, stabling, and allowance to carters for 136 tons potatoes, say 68 waggon-loads, at 10s. -		34	0 0
— do. do. and do. to do. for 24 tons early potatoes, say 24 cartloads, at 5s. -		6	0 0
— do. do. and do. to do. for 30 loads straw, say 20 cartloads, at 5s. - -		5	0 0
— do. and allowance to carters for 72 sacks peas, say 7 one-horse carts, at 4s. - - -		1	8 0
— seed for 27 acres potatoes, 10 cwt., at 3s. *p.* cwt. 1*l.* 10s.		40	10 0
Carry over	L.	972	2 6

	Brought over	L.972	2 6
To seed for 21 acres wheat, 3 bush. at 9s. 6d. *p.* bushel, 1*l.* 8s. 6d.		29	18 6
— do. for 10½ acres clover, 12 lib. red, at 1s. 1d., 13s.; ryegrass seed, 2s.—15s.		7	17 6
— do. for 3 acres peas, 3 bush. an acre, at 10s., 1*l.* 10s.		4	10 0
— do. for 1½ — tares, 3 bush. an acre, at 10s., 1*l.* 10s.		2	5 0
— do. for 21 — oats, 4 bush. an acre, at 3s. 9d., 15s.		15	15 0
— do. for 10½ — rye, 3 bush. an acre, at 4s. 6d., 13s. 6d.		7	1 9
— do. for 21 — turnips, 2 lib., at 1s., 2s.		2	2 0
— blacksmith's bill 25*l.*; wheeler's do. 10*l.*; collarmaker's do. 4*l.*		39	0 0
— incidental expenses		15	0 0
Total annual expenditure	L.1095	12	3

To Rent and Taxes	L.305	11	0
— Labour	302	3	6
— Keep of Horses	222	0	0
— Seed	109	19	9
— Manure	55	10	0
— London Journies	46	8	0
— Tradesmen's Bills	39	0	0
— Incidental Expenses	15	0	0
	1095	12	3

ROTATION.

1. Potatoes (after Oats & Rye.)
2. Wheat.
3. Clover.
4. Oats, (Stubble Turnips after.)
5. Potatoes.
6. Wheat (Potatoes, Peas, &c. after.)
7. Turnips.
8. Oats (Rye after.)

N. B. The straw of the 21 acres of oats, and ditto of the three acres of peas, is proposed to be used in littering horses and in foddering sheep (in the farm-yard), besides ricks thatching, &c. and which, together with the dung made by horses (kept on hay, &c.), is calculated upon producing enough for 16 acres of potatoes. The remaining 11, together with 4½ after peas and tares (for turnips), and 10½ of clover, are proposed to be done in the way following:—90 waggon-loads (or 180 two-horse carts) will be sufficient for 18 acres; that is to say, 11 potatoes, 4½ turnips (after peas, &c.), and 2½ of clover, and the remaining 8 acres of clover is proposed to be done with turf ashes—say 15 carts to an acre, is 120, as charged in the estimate. It is proposed to dung well, immediately when the crop is off, 10½ acres oat-stubble, and sow with turnips; and also to plough without delay the other 10½ acres of oat-stubble, and sow with rye, and both to be eat off with sheep, in time for potatoes the next spring.—10½ acres turnips after potatoes, peas and tares, and 10½ after

oats, together with 10½ rye and oat and pea straw, is calculated upon keeping a sufficient number of ewes (to lamb in January), to pay the sums charged in the estimate for these crops, and also enough to pay for attendance on sheep, they being proposed to be kept on turnips, &c. during the day, and in the farm-yard during the night. 30 loads wheat-straw are intended to be sent to London (in June), and which leaves 12 to be sold at home. 136 tons of the 21 acres potatoes are proposed to be sent to London; and, reckoning upon 7 tons to an acre, will leave 11 to be used for plants, besides all the middlings and chats (the most of which will be for sale at home.) In July, the early potatoes and peas are to be sent to market; and from the 1st of August to the end of March, a waggon and a two-horse cart are proposed to be kept going with the other 21 acres, at all convenient times, they going off in the morning, stabling the night in London, and returning following day. In charging grain, carrying, ricking, thrashing, and also potatoes taking up, pitting, &c. the proportion of labour performed by three men, boy, and six horses, charged by the year in the estimate, is of course abated. The grain, it may be needful to add, is calculated upon being thrashed with a machine. Only six acres of clover is calculated upon being made into hay, 4½ being intended to be cut by carters for horses. The stock of ewes are intended to be bought early in November, and to be sold with their lambs about the 1st of May; and part of the lambs are expected to be sold earlier, fat, for the butcher. A few acres of carrots to be taken occasionally, instead of oats—say after clover or turnips; and also a few of the stubble turnips may be sent to London for boiling.

FOR THE FARMER'S MAGAZINE.

Agriculture of Hanover.

[From Travels in the North of Germany. By THOMAS HODGSKIN, Esq.]

THE land of Hanover is divided amongst persons who may be conveniently classed thus:—The sovereign, the nobles, town and religious corporations, persons not noble. In what proportions it may be so divided, is not known. One-sixth at least belongs to the sovereign, and possibly more than three-sixths may belong to the nobles, one-sixth to the corporations, and less than one-sixth to persons not noble. That which belongs to the sovereign is again divided in general into large portions, which

have once been noble or ecclesiastical properties, and are now let by the crown in their entire state. They may contain from 500 to 3000 acres, or in the unfruitful provinces even more, with rights of pasturage over large districts, and, in some cases, with a right to the services of the peasants. The tithes, also, are sometimes united to them. They are let to the amtmen, to individuals, or to noblemen filling the office of amtmen; but it is always considered as a favour to have them; and they are let only to those persons whom the government wishes to gratify or reward. Although the individuals in general pay a certain rent, they are rather considered as administrators of the royal property, than as tenants making a bargain and dealing with landlords. The duties of the amtmen as magistrates, are generally combined with this administration. These large portions are sometimes cultivated entirely by the first tenant, sometimes they are again divided into many small portions, which are held by the bauers according to some ancient tenures, and some certain conditions, called either *Meyer* or *Leibeigen*, and to be afterwards described. Sometimes also the property of the sovereign is divided into small farms, held immediately of him on such conditions; and then the amtmen are the collectors of the revenues from the farms of this sort which lie in their districts. The whole of this property, whether divided into large or small portions, is never put up to auction, nor is the letting subject to competition; consequently, the rent is never high. Some portions are in fact held for almost nothing, as a large farm, which was formerly the property of a monastery, at Welnde near Göttingen; for others, a very moderate rent is paid. They are let sometimes for the life of the tenant, sometimes for a term of years, and sometimes during pleasure; yet, as the persons who hold them are generally respectable magistrates, they are never subjected to lose their farms without some gross impropriety of conduct. The sovereign has more or less property in all the provinces, but comparatively little in the marsh lands and in Friezland.

There are 644 noble properties in the kingdom, several of which are united in the hands of one person; but there is no one nobleman whose income amounts to more than 30,000 Thalers, or 5000*l.* per year. Counts Hardenberg and Platen are amongst the most opulent of the nobility. I have met with three instances which have been mentioned, of nobles cultivating their own estates; but in general there are no houses on the properties of the nobles, other than the houses of the farmers; and few of the nobles ever live in the country. Those who retain their property in their own hands, generally live in towns.

Some exceptions have been met with; but, for a nobleman to live in the country without being a magistrate, or without holding some office, is looked on as degrading. Such persons are rather treated with contempt, and are designated by the odious name of '*Land Junker.*' Some of the nobles have full power over their properties, and can let them all to one person, and on what terms they please; in which case they make respectable farms, and may contain from 100 to 500 acres. Such are the farms belonging to the family Von Lenthe, situated at Lenthe, near the town of Hannover. But more generally the nobles have not full power over their property. It is divided into small portions of 5, 10, 20, 30, or 80 acres, which are held on certain conditions, either of doing service, or of paying rents which have been long ago established, and which the landlord has no power whatever to alter. It may be from this cause that so few nobles reside in the country. They have in truth no land but what is occupied by other people. The use of these small portions of land on certain conditions, is the property of the occupier, which he can sell; as the stipulated rent and services are the property of the landlord. The bauer has an hereditary right to the use, the landlord an hereditary right to be paid for that use.

The land belonging in name to religious corporations, in reality to the crown, is again divided like other crown lands, into large and small portions, held on similar conditions to those by which they are held. That which belongs to towns, is sometimes divided into farms of from 60 to 100 acres; but it is much more generally divided into very small lots of 1, or 2, or 10 acres, which are hired by the tradesmen, and other inhabitants of the towns, who use them as gardens, or to grow corn for their family consumption. Instances have been met with, also, of the amtmen dividing a portion of their hired land into smaller portions, which they let to the peasantry. In fact, almost every family of the middling and poorer classes, whether living in town or country, and whatever may be its other occupations, has a small portion of land, at least large enough to grow the fresh vegetables necessary for its own consumption, and very often large enough to grow both the potatoes and the corn it requires. This minute division is in some measure convenient, but, carried too far, it becomes pernicious; and may be remarked as an example of an imperfect division of labour. For example, bakers, butchers, shopkeepers, ard others, are also farmers of 10 or 12 acres of land. They are too poor to keep horses, and they are obliged to hire them and agricultural instruments from other persons. They have no time to look after the people they hire to do their work; mutu-

al discontent ensues; and the ground is never more than half tilled. I might wish every mechanic and artisan to have so much ground as he can cultivate himself in his spare time; but for him to have more is wrong. Most of the towns and villages have large commons also, on which the inhabitants have a right to keep one or two cows. The milk, and what can be made of it, very often forms a great part of the nourishment of the poor, and the delicacies of the rich.

The occupiers of small portions of land, whether held under the crown, under nobles, or corporations, may be conveniently divided into two classes, distinguished by the conditions of their tenure. There are a great many different tenures,—so many, indeed, that, even rich as the German language is, it hardly contains terms for them all. I have enumerated more than twenty; but the division here adopted may serve to give a general idea of their nature. The first class are called *Meyers*, half *Meyers*, or quarter *Meyers*, according to the size of their farm. It is, however, very rare for a whole meyer, in any of the fertile districts, to possess so much as one hundred *Morgen* of land, about eighty acres; from thirty to forty acres is the more usual size of their farms, while the half and quarter meyers have much less. The other class are called *Leibeigeners*. The German words are here used, because farmer would most inadequately represent meyer; and so different an idea is connected with the term slave, or bondman, when it is applied to the slaves of the West Indies, from what it ought to signify when applied to the German leibeigener, that I shall use neither of them, though one or other is the translation usually given in dictionaries. The term leibeigener signifies strictly a person who owns his own body, and nothing more.

The conditions by which the meyers have the use of their land, consist in paying to the landlord a certain fixed yearly sum, or yearly quantity of corn, for rent. The landlord cannot alter these conditions, neither can he refuse, except when the heir is an idiot, or the rent has not been paid, to renew the lease on the death of the occupier. I never found the rent, in the fertile districts, to exceed twelve shillings per acre; generally it was between this sum and seven shillings. I have heard that it has been so high in Hildesheim as thirty shillings. It amounts to this sum in the marsh lands for free land; but throughout Kalenberg, and the provinces moderately fertile, it may be roughly stated as between seven and twelve shillings per acre, or from two to three and a half Thalers per Morgen. In Lüneburg, Bremen, and the other desolate provinces, much land which is occupied pays no rent; but it all pays tithes, and is burdened with small services. The meyers have also to give

the landlord a certain sum when, from death or from sale, the occupier is changed. I met one instance of a much higher rent. The people in the neighbourhood of Göttingen hired small portions of land for a season to grow tobacco, on which the landlord laid a certain quantity of dung; and for this land they paid at the rate of thirty-five shillings per acre. The rent is sometimes paid in corn, sometimes in money, sometimes in both. When paid in corn, it seems to give endless trouble. The corn is thought not good, or fault is found with it, and the parties are sure to disagree. With rent sometimes, though rarely, trifling services are also combined, such as supplying the landlord with a pair of horses when he wants to go to town; but all these services are fixed, not to be altered at the will of the lord; and an exemption from them may be, and has been, very generally purchased. A progress is making, particularly on the lands held from the crown, in abolishing them. All the buildings, stock, instruments, belong to the meyer; to the landlord nothing belongs but the rent.

The conditions by which the leibeigener holds his land are also fixed; they are not the arbitrary will of his lord, and it descends with these to his children; but they are conditions of service so onerous, that they reduce him almost to slavery. He is obliged to cultivate the land of his lord a certain number of days in the year; to neglect his own harvest while he is carrying in that of his lord; to employ his horses to bring home his lord's wood; to supply his lord with coach-horses when he demands them—in short, to do him all sorts of feudal services. This relation of the two parties to one another, is equally prejudicial to both. If the landlord had to hire labourers, he might have his work tolerably well performed; but it is now shamefully performed, because the people who have it to do have no interest whatever in doing it well, and no other wish but to perform so little as possible within the prescribed time. The people acquire from this sort of labour habits of slothfulness and neglect, which they never lay aside, even when performing their own work. This relation of the peasant to the landlord has been properly named 'a school to teach idleness;' and both parties are now injured by their adherence to the absurd regulations of people whose very names are forgotten. It is remarked, that the inhabitants of Hoya and Diepholz, where the tenures approach most to leibeigen, are much worse in their manners, and more stupid than the inhabitants of Kalenberg, whose land is all held by the meyer tenure; but these again are as much inferior to the perfectly free farmers of Hadeln or Frieze land, as they are superior to the people of Hoya.

From the manner in which land is divided, there are three distinct classes of cultivators, each of which follows in some measure methods of cultivation peculiar to itself.

First, those who have large farms, whether hired of the crown or of nobles. They are called economists, have tolerably large capitals; and, when they have a very large amt-farm, keep one or more bailiffs to superintend the management, and have establishments that are regulated with all the nicety of military subordination. There is first a head bailiff, or steward; then there are two or three under-bailiffs to look after particular divisions of the farm; clerks to keep accounts; a chief shepherd, who has the management of the sheep, and the superintendence of the other shepherds; a chief waggoner, who has the same office with the teams; and a chief workman, who in like manner looks after the thrashers, weeders, and other labourers. Many of the actual tenants are jurisconsults, and have not received an agricultural education; of course, their stewards are the managers. The stewards consult their employer on any great alterations, show him their accounts, and pay into his hands the profits; but they have all the management themselves. Formerly, the stewards were mere practical farmers, who were taken from cultivating their own ten or twenty acres to look after such an establishment. They were admitted to the table of their principal once or twice in a year, and were highly honoured by such a notice. Some such are yet found, but, in general, they are persons who have been regularly educated as agriculturists at some one of those academies or institutions for teaching agriculture which are at present numerous in Germany. They are not only farmers, but they are men of a liberal education, who live with their employers. They are said to receive from 300 to 180 Thalers, 50*l.* to 30*l.* per year.

The second class of cultivators are the owners of free property. These persons direct the labours on their farms, have some considerable capital, own or hire the land, and own the stock. They hire labourers to do the work of their farms; and they resemble very much English farmers.

The third are the occupiers of small farms, whether leibeigeners or meyers; for these, in their manner of cultivating and living, only differ as to more or less of knowledge and activity. They have this in common, that neither of them have, in general, much more capital than their necessary implements, two or four horses, and money to support themselves and families. When they have servants, they are generally the junior members of their own families: but they think of what is to be done, and they themselves are the persons who do it. This is by far

the most numerous class of cultivators, and they are what we call peasants; in German they are bauers. Probably four-fifths of the country is cultivated by them.

A class of men, resembling strictly our agricultural labourers, that is, who work merely for hire, are in no part of Germany very numerous. They are found in the marsh lands; some are met with at all large farms; but at both these places they have, in general, also some little property of their own. By far the greater part of the agricultural labourers are the bauers, who are at the same time the occupiers of the land, and the owners of the stock.

I may here add the little I learnt relative to the support and management of the poor. It seems consistent with the regulations concerning landed property in Germany, that there should not be so many paupers there as in our country. Some other regulations are known, which have probably assisted in protecting Germany from the evil of pauperism to the same extent in which it exists with us. There is no legal provision for paupers. A law of the guilds, which extended to most trades, forbad, and still forbids, where guilds are not abolished, journeymen mechanics from marrying, and, in most countries of Germany, people are obliged to have the permission of the civil magistrate before it is legal for the clergyman to celebrate a marriage. The permission seems to be given or withheld as the parties soliciting it are thought by the magistrates to be capable of maintaining a family. At least, it is to prevent the land from being overrun with paupers that the law on this subject has been made. There are so many persons who are ready to impose restrictive laws on their fellow men, and such an undue value seems to be set on the good they can effect, that it is necessary to observe that the whole good of this last restrictive law seems not equal to the evil resulting from it. It is hoped, therefore, nobody in our country will be fond of extending the power of the magistrate to give or withhold a permission to marry.

There is no legal provision in Hannover for the poor. The Vorstehers of the villages, and some of the citizens of the towns, call on the inhabitants, generally of a Sunday, for some little contribution for the relief of the distressed, which, from the publicity of the thing, they are under a sort of necessity to give; and if they do not, the collector is ordered to notify it to the clergyman. The collectors bring with them a book, in which the sum given by each person is inscribed; and they, in some cases, receive a small recompense for their labour. The funds so obtained are distributed by the collectors, by the clergymen,

and by the magistrates of the towns, according to the wants of each person soliciting relief. When this money is collected, the inhabitants are warned by the collectors not to give alms; and they seem to expect, that, for what they give on this occasion, they ought never to be tormented by beggars. With the exception of some wandering journeymen, I saw, in fact, very few beggars. In the town of Hannover itself I scarcely saw one. In some of the marsh lands the practice is to allow the poor to beg for themselves on a Sunday. They then go regularly from house to house, and the inhabitants as regularly bestow their mite on the afflicted. I met a similar custom in France, where the old ladies lay by a certain portion of sous ready to bestow on every Sunday. In both these cases the quantity of beggars seemed so regular, that each inhabitant knew pretty accurately how many would call for relief.

The three classes of cultivators pursue different plans of cultivation. The large farmers have in general extensive rights of pasturage. They keep large flocks of sheep, grow artificial grasses, turnips, and other succulent roots, and lay down a part of their land as meadows, that they may have an abundance of hay. The bauers may sometimes sow a little clover, or lucerne, or spergel, but they seldom have meadows, and keep no more cattle than is necessary for their work, and than the common lands can feed. They keep sheep only in those countries where extensive heaths are favourable to feed them. There are some other exceptions, such as a whole meyer uniting a distillery and a public-house with his farm, and thus being enabled to keep more cattle; but, in general, the bauers keep only the horses necessary for their work, and the number of cattle which can be fed on the common lands. There is therefore a radical difference between the husbandry of the different classes of cultivators.

At one of the large farms the land was divided into two portions. The first had no fallows, but the following rotation of crops.—1*st* year, hoed or drilled summer fruit. 2*d*, Wheat or rye, over which clover was sown in the spring. 3*d*, Clover. 4*th*, Wheat or rye. 5*th*, Barley or peas. 6*th*, Oats, or sometimes rye;—then as before. The whole land under this course is dunged twice. The other course was, 1*st*, Fallow, as a preparation for, 2*d*, Rape seed. 3*d*, Wheat or rye. 4*th*, Rye, dunged. 5*th*, Flax. 6*th*, Rye, dunged. 7*th*, Beans, dunged. 8*th*, Rye. 9*th*, Oats; and then comes fallow again. These courses were followed on the farm of Mr Amtman Meyer, at Coldingen. The soil was a brown-coloured loam, free from stones, fruitful, easy to work, and easily kept clean; but in wet

weather it quickly became foul, if neglected. A large portion of meadow land bordered on the Leine, and was subjected to be overflowed by that river. The land under tillage was more elevated. This farm was hired of the crown, and situated about eight miles from the town of Hannover. It contained altogether about 2600 acres, with a right of pasturage over extensive meadows, from the time they were mowed till the 15th of May, when they were laid down for hay. Seven pair of horses and eight of oxen were kept as working cattle. No cattle were fattened. A portion of the land was let for feeding cows, the superior tenant not liking the trouble of this part of husbandry. His favourite pursuit, and that which rewarded him best, was sheep, of which he had about 2200 head.

The original breed were the small German sheep, which, from being numerous in the neighbourhood of the Rhine and Saxony, are called Rhenish or Saxon sheep. They were crossed by Merinos, and now bear fleeces as fine as those of the Merinos themselves, weighing on the ewe, 2 or 2½, and on the ram, 4 or 4½ pounds. No attention was paid to fatting the carcase, wool being the principal and only source of gain. The peace, and communication with England, had enhanced its price; and the last shearing had been sold so high as 4s. 7d. per pound, which was nearly double its former price. The carcase weighs, on an average, 40 pounds; the larger ones 60, and sells for about 9s. to 15s.

The shepherds were all dressed in long white linen coats, and white linen small clothes, and wore large hats cocked up behind, and ornamented by a large steel buckle. They all looked respectable and clean. They were paid in proportion to the success of the flock, and had thus a considerable interest in watching over its improvement. They received a ninth of the profits, but they also contributed on extraordinary occasions, such as buying oil-cake for winter food, when it was necessary, and such as buying new stock, a ninth of the expenses. The head shepherd had two-ninths of the profits.

Some other workmen on this farm were paid in proportion to their labour. The thrashers, for example, were paid with the sixteenth part of what they thrashed. Other labourers were hired by the day, and they received about 7d. In harvest time they may make 8d. Some are paid by the piece, and then receive at the rate of 2s. for cutting and binding an acre of corn.

As the farmers of free property are very generally confined to the marsh lands, and to Friezland, and as the soil, situation, and agriculture of these districts are the same, in describing the

agriculture of the second class of farmers, I shall necessarily describe the agriculture of the marsh lands.

The land under the plough in the districts on the Elbe, is generally divided into long slips fifty feet wide; between each of these slips is a ditch which extends the whole length, and the land between the ditches is laid up round, so that every precaution is taken to keep it dry. The ditches supply rushes and coarse grass, which are used to litter the cattle.

Fatting cattle for Hamburg, is one of the pursuits of the farmers of the marsh land. Sheep are little attended to; each farmer keeping only so many as supplies his own family with wool and milk. Every day labourer has one or two, which he uses for the same purpose. They are constantly chained in pairs, and pick up their living on the dikes and other unenclosed spots. When the labourer cannot command such a spot, he is obliged to hire from the farmers so much land as will feed his sheep; but this is a favour not always obtained. The sheep of the marsh lands are much larger than the sheep before mentioned. They weigh, when fat, from 80 to 100 lib., and bear a coarse fleece of 5 to 6 lib. weight. From being more kept for their milk than to fat and kill, they are very generally poor; and, when sheared, look most wretchedly. They resemble the marsh sheep of Britain. The only cheese made in any part of Hannover, except Friezland, is made from sheeps' milk; and the shepherds say that the wool of the animals milked is never so fine nor so abundant as when they are not milked.

The great objects of the marsh land farmers is to fatten cattle, and grow corn and seeds. Meadow land, consequently, lets for more money than any other, and much is kept in grass seven or eight years. It is then broken up; and, 1. oats is sown on it; 2. wheat or rye; 3. wheat or beans, and the land is dunged: this change of crops continues without intermission till the land has got foul, generally with couch grass. On an average, this is every ten years. It is then fallowed till June, when it is sown with rape seed. To prepare for this crop, it is ploughed at least six times, and very often nine; and it receives a large quantity of dung. At this time, also, the land is mended by another means. The soil is composed of three distinct strata, which are everywhere found like the deposites of three overwhelming floods, but lying at unequal depths. The first is clay, mixed with sand, and is very fruitful; the second is a stiff cold clay, that is said to be absolutely unproductive; the third is very fine white sand, mixed with the blue slime of the rivers, and with the remains of vegetable substances. The third strata is

usually found at a depth of from three to ten feet; and, when mixed with the clay at the surface, renders it more productive. To procure this sand, holes of six feet diameter are sunk, till it is reached, when it is thrown out, and the second strata of cold clay thrown back to supply its place. Many such holes are made in a field, till a sufficient quantity of the sand has been spread over the surface. Sometimes the ditches supply enough; and the process then resembles precisely that which has been practised in Lincolnshire by Mr Cartwright. It appears that the material employed both on the shores of the Elbe and in Lincolnshire, has a great resemblance, and is found lying in a similar situation. Such a practice has long been in use on the marsh lands belonging to Hannover; and it appears to have been suggested to the farmers there by observations similar to those which suggested it to Mr Cartwright. It was found in digging the ditches; and it was thought that the sand would loosen and render the clay easier of cultivation.

Although artificial grasses grow luxuriantly, they are very little used. Clover is sometimes sown on the fields intended to be laid down; but it is mowed as green food, or fed off, and never made into hay. The reason assigned for this is, that the cattle will not eat it when they can get grass-hay. There is little occasion to cultivate it, because there is much land lying on the river, or in other places, of which every farmer has his portion, which will serve no other purpose but to grow hay.

There are some parts where the land, once under the plough, is never laid down to grass. This is the case particularly in Hadeln, where the course of crops is constantly, 1. wheat; 2. beans; 3. rye; 4. and 5. rape or cole seed; then again follows wheat, and so on, without intermission: of course, the rape implies a partial fallow, as it is not sown till between the months of July and August; and till then, the land is repeatedly ploughed, cleaned, and manured.

In Friezland, a rotation of crops similar to this last is followed; but here the inhabitants approximate more to the customs of Holland, keep quantities of cows, and make butter and cheese. Much land has there been recently won from the Ems, which possesses a vast degree of fertility. It is said to give back rape seed three hundred times multiplied, and barley sixty; when the fourth part of this is reckoned, in ordinary land, the usual increase. The Friezland, or Dutch, breed of horned cattle, is celebrated for its size, beauty, and for the quantity of milk the cows give. This breed, with the cattle from the Tyrol and Switzerland, are favourites in other parts of Germany; and they are brought from these countries to improve the breed of the

native cattle. The inhabitants of Friezland have been at great expense in gaining their most fertile marsh, and no portion of it is left uncultivated. Both here and in Hadeln, so well as an uninitiated man can judge, I should describe the agriculture as excellent; and it is excellent without any theory. The people are not writers, and they are said to have no books on agriculture. They speak the language of Germany, and may, of course, have German books; but their cultivation has preceded the knowledge of the rest of the country, and is said to have been entirely effected without agricultural writers.

There is one mode of cultivation, the three years' rotation of crops, which is common nearly to all bauers. In fact, they are very often obliged, and were formerly much more obliged than at present, to follow precisely the same mode. In general, some persons possess the right to herd cattle on the lands of the bauer, and they are consequently obliged to leave them fallow every third year. I have met several instances of this; and, to show that it is general, I shall translate a sentence from a German author. At the same time, it must be remembered, that this is one of those pernicious rights which have been in several places abolished. 'In most districts, domanial and noble properties have a right to herd their cattle; that is, they may send them on the land of the bauer, and he is obliged to leave his fallow unemployed, and must not plough it before St John's day. Lately, this right is in many places abolished, and he is now *permitted* to employ a part of his fallow in raising summer crops for his cattle.' Wherever this right exists, the system of cultivation is the same. Winter corn follows the fallow; the bauer may choose whether he will sow wheat or rye, but winter corn he must sow. The land over which this right of pasturage extends, is generally divided into three large portions, and each of the peasants has a part of each portion; so that the land belonging to each is situated in different places, and the fallowing takes place on each of the large portions alternately. Not only the domanial and noble properties have this right, but also the properties of corporations. The land belonging to Göttingen, for example, is subject to it; so that the land on one side of the town is always sown with winter corn, on another it is sown with summer corn, and on the third it lies fallow. Where such rights exist, or existed, there the agriculture could not improve; and it must be precisely the same, at least, through the whole of the district over which the right extended.

The rotation of crops here mentioned, is that which the bauers generally follow. They have fallow, then rye or wheat, and then oats, barley, peas, or beans, and then again fallow. Where

the above right of pasturage does not exist, the bauers begin to employ their fallow for some summer crops; and this takes place, particularly near towns, or when, from other circumstances, they can command manure. Another course of crops I have met with was, 1*st*, Fallow, employed for potatoes, flax, or some such crop; 2*d*, Wheat or rye; 3*d*, Lent-corn; and, 4*th*, Rye or beans. But in general the three year rotation, with unemployed fallow, is common to the peasants throughout the greater part of Germany.

In some parts buck-wheat is much cultivated. The grains of this *corn*, if it deserve the name of corn, is made into grits, and into *pancakes*; and forms the food, particularly the suppers, of most of the inhabitants of the sandy and moory districts. The peasants have also, in these districts, large flocks of sheep. The extensive heaths are useful for no other purpose but to feed these animals. They cultivate their ground, 1*st*, with rye; 2*d*, rye; 3*d*, oats or buck-wheat; or, 1*st*, rye; 2*d*, oats or buck-wheat; and 3*d*, rye. The ground is then left for four or five years, and fed off during that time by sheep. It is then broken up, and again cultivated in the same manner.

In the greater part of northern Germany, most of the bread is made of rye; consequently, this grain is cultivated more than wheat. Almost all the bauers cultivate such a quantity of flax as their wives and families can spin. In the provinces of Göttingen, Grubenhagen, Hildesheim, and Kalenberg, and in many other parts of Germany, tobacco is extensively cultivated. The ground in which it is to be planted is well dunged and prepared towards the middle of June. It is then planted in rows, two feet apart. It is raised from seeds in hot-beds. When it succeeds it is one of the most profitable crops. It requires too much care to be grown by the large farmers. It rather improves than injures the ground; but the peasants like to plant it on the same spot repeatedly. They cultivate several seeds for the sake of oil, such as rape and cole seed, but more particularly the white poppy. The seeds of this plant supply the oil which the bauers most commonly use both for salads and for their buck-wheat pancakes. Tobacco, flax, and poppies, added to the crops we cultivate, give the German bauers an advantage. They have a greater choice of different fruits.

Several examples of wages for agricultural labour have been already given, and I shall here add some others. Thrashers are usually paid with a proportion of the thrashed corn. They receive from the 13th to the 16th part, in proportion to the quality of the grain. It is reckoned that a man must gain ¼ scheffel, about 1½ bushel, of winter corn, and 1½ or 2 scheffel

of summer corn per week, to enable him to support a family. Ten marien grosscher, or 10d. per day, is the highest wages for common labour which I anywhere heard of. Most generally, and the rate very seldom varies, it is 6d., 7d., and 8d. Women receive from 4d. to 6d. This is the price paid for digging ground, which is hard labour. It is also paid for by the piece, at the price of 1½d. the square rood. I have met instances of people reaping corn, who were to be paid with a certain quantity of flax seed. I have found the same price given for labour in Saxony, in Prussia, and in Hannover; and the book I have before quoted, Der Angehende Pachter, gives the same prices. Wheat was at the same time selling for about 4s. 10d. an English bushel; rye for 4s. 3d., barley 3s.; and oats 1s. 9d. Beef was from 3d. to 4d. per pound; veal from 2½d. to 3½d.; mutton from 3½d. to 4½d.; a bushel of potatoes cost about 9½d.

The plough in common use is a simple but convenient instrument. It has two low wheels; the beam is straight; the share cuts nearly horizontal; and the mould-board, which is fixed, always turns the furrow on the same side. Two horses and one man work these ploughs, although I have seen six horses employed in the marsh lands near Hamburg, with two drivers both riding. This plough costs from 16s. to 28s. The large farmers sometimes plough with two oxen; but the peasants, except in the sandy districts, where oxen can be turned on the commons, invariably use horses. When they are very poor, and have no horses, they sometimes employ their cows. Two or more join their stock, and, with four cows, they manage to plough very well. When the occupier is too poor to keep a team, or occasionally to hire one, he works his land with the spade, and much land is dug. An elderly peasant, close to the town of Hannover, pointed with exultation to his field of flax, and told me 'to observe how much better it was than that of his neighbour; but he is a young man, and is lazy; he ploughed his piece of ground, and I dug mine. My wife and daughter weeded it, and you see how well it looks. I can get my living off my acre; but my neighbour, I am sure I do not know what he does.' Ploughing appears to me to be well and expeditiously done. — The plough mentioned must have been a long time in use, because it is common all over Germany; and it appears to me to be superior to the common large wheel ploughs, with shifting mould-boards, of the south of England, though not equal to the Rotheram, or Mr Small's, or the swing-ploughs.

In Friezland, they have a plough fully equal to these. It is, I believe, known in England as the Dutch plough, and as the origin of Mr Rotheram's plough. It is without wheels; and

though fit for that heavy marsh, is worked by two horses, and is so light that I lifted one without difficulty.

In the sandy districts, the people have another instrument to answer the purpose of a plough, called a Haken, which is very simple. It has neither turning, nor mould-board, nor wheels; the share is long, pointed at the end, and then broad and flat. It is only fit to scratch the sand with. The iron share costs about 3s. 4d. The peasants make the wooden part themselves, during winter; and when they buy it complete, its price is only about 5s.

I only saw one two-wheeled cart employed in agriculture throughout the country. All the work is done with light four-wheeled waggons, drawn by two or four horses. They consist of three broad planks, the bottom one of which is permanently fixed to the two axle-trees; the side ones are moveable, and one of them is always taken off when the contents of the waggon have to be thrown out. Four-wheeled waggons, besides being heavier of draught, are more difficult to turn than carts; and they cannot well be made to turn up so as to throw their contents on the ground. But their disadvantages are so well known, that I need not discuss them.

Scythes and sickles are like our own; but there is a sort of sickle in Friezland different from ours, and which appeared to me to be superior. There is, also, in the same country, a very convenient sort of shovel-cart, drawn by horses, which is used to distribute expeditiously and equally, over the surface of the whole field, the earth which is thrown out of the ditches. I despair of being able to convey, by writing, an accurate idea of these implements, and therefore I do not attempt to describe them. These are not the only parts of the agriculture of Friezland, which makes that country apparently worthy of a visit from some of our agricultural gentlemen.

Generally all sorts of grain are sown broadcast. Beans I have seen sown in rows by the hand; the holes being made by an instrument that had a row of ten or twelve wooden spikes. I doubt if a man could make the holes with it so fast as with a single iron crow; and if the ground were hard, this instrument would not pierce it.

The only manures which I saw employed, were common dung, the refuse of salt-pans, and once or twice lime. In the sandy districts, where very little straw is to be had, it is customary to pare turf with heather growing on it, and to lay it in large heaps in the yards and sheep-stalls and stables.

In some parts of Hildesheim there are hedges and hedge-rows of trees. Isolated farm-houses and villages are generally

surrounded by trees. Forests cover the hills; but most of the cultivated land is destitute of both hedges and trees. As no instance has been met with of the peasants cultivating turnips,—as they rarely drain their land,—as they have no hedges to make —their agricultural labours are much simplified. After the winter corn is sown, till the following 1st of March, they have nothing to do in their fields, and rarely visit them. During the winter months they thrash their corn, which requires, however, but little time, and is very often done so soon as it is harvested. Those who have teams, and live near wood or peat, and near towns, employ themselves in carrying fuel to them. Many, indeed most of them, weave linen. The want of hedges seems to save a great deal of labour, and there is a much smaller place as a nursery for weeds and destructive animals; but it somewhat diminishes the beauty of the country. The union of weaving and farming is an example of imperfect division of labour.

The 1st of March is the commencement of agricultural labour. 'Then we break loose,' says the farmer. A day has also been mentioned when the meadows are no longer to be fed off. And almost every distinct branch of farm business has some particular day on which it is commenced. Thus, the cows and sheep are not allowed in many places to go on the common lands before the 23d of April, St George's day. This was to many of the poor beasts a joyous day; they had been shut up all the winter, and were glad again to breathe the free air. Some few old animals seemed attached to their dirty stalls, and often turned their heads back, and bellowed their melancholy adieus; but the young ones frisked and bounded past all the power of the cow-herds, maid-servants, boys and girls, and spectators of the village, to keep them in order. How changed did they become in a few days! When the novelty and pleasure were over, they went and came with so much regularity as a well-disciplined regiment performs its evolutions. Fixed days for work mark a general similarity in the habits of the people. They also designate a rude and a superstitious people. For they regulate their labours by only a general sort of fitness in the seasons, and often sacrifice valuable time for the sake of following the calendar of the priests.

I have frequently made observations on the manners of the bauers; and I shall here add something further on the subject. With the exception of some parts of Westphalia and of Oldenburg, they invariably live in villages. Their houses have very frequently the same form, and their insides are laid out somewhat in the same manner as those of Friezland, which have

been already described; but they are smaller. At some particular corner you find a crib-bed for the man who looks after the horses, when one is kept; and his bedding consists as much of the provender of his cattle as of blankets and sheets. In the bauer houses there is little other furniture than a stove, a stool, a table, and the cooking utensils. Chimneys are very rare. The smoke finds its way out under the roof, or at any hole it meets with; or it is deposited as tar and soot on the beams and rafters. Generally the houses are built of an oak frame, filled in with closely rammed clay or bricks. They have high thatched roofs. Fires are very frequent in most parts of Germany, and, owing to this manner of building, when once they break out, it is impossible to stop them. The government of Hannover has commanded that houses shall be built of bricks, and covered with tiles. But a family which cannot command these materials must not, on that account, be left without a roof; and accordingly, in spite of this command, I have seen people, after a fire, again building their houses with wood, and again thatching them with straw.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR, *Sweet-Bank, 24th April*, 1820.

As I happen to be situated in the near neighbourhood of the Lomonds, and actually employed in directing (for the interest of my constituent) improvements thereon, if you think the following observations are worthy of a place in your Magazine, you may insert the same. I am, Sir, your most obedient, &c.

NIEL BALLINGAL.

Remarks on the Division of the Commonty of the Lomonds of Falkland, and Consequences likely to result therefrom.

THIS commonty contained 2578 Scots acres, over which the neighbouring proprietors, and the inhabitants of Falkland and other towns, claimed a right of pasturage, forming *in cumulo* above 250 claimants, whose valued rent amounted to 12,906*l.* 18s. 6d. Scots; and the real rent, or annual value of the commonty, was 745*l.* 10s. Sterling.

Sir William Rae, the Commissioner appointed by act of Parliament, had the honour of carrying the division into effect, to the general satisfaction of the parties concerned, as particularly stated in his award, dated the 30th December 1818. And the several allotments are most distinctly delineated upon a plan of the Lomonds, by Mr Alexander Martin, landsurveyor, Cupar,

by order of the Commissioner, who marked the allotments on the ground with large march-stones; on each stone, W. R. 1818, is cut. The necessary roads, for access to the several allotments, occupies about 24 acres; and 10 acres are also set apart round each of the two lime-quarries, situated, the one near the East, and the other near the West Lomond; and in these, all the proprietors of allotments are entitled to quarry limestone for their own lands, but not for sale.

	Acres.
Upon the final division of the Lomonds, the allotments set apart to the nine greatest claimants, amount, on an average, to very nearly 2000 acres each, or -	1800
The 12 next greatest claimants average 45 acres each, or	540
The 229 lesser claimants have the remainder divided among them - - - - -	213
Scots acres	2553

—and this exclusive of the roads and quarries.

In consequence of this division, very essential improvements have already taken place. Many of the larger allotments are either already, or in progress to be enclosed, with good stone dikes. Very considerable plantations of wood are already formed; while draining and fencing are also in progress. Other proprietors, where the soil is suitable, are trying to turn their lots into arable land; and having all a command of lime, the prospect of succeeding is very good: The probability however is, that the allotments planted will ultimately pay better than those in tillage. But one thing is absolutely certain, that numerous plantations will not only add much to the beauty of the county of Fife, situated as they are on such elevated ground, but also will shelter, and very much improve, the climate of the unplanted allotments, and render them greatly more valuable, whether in tillage or in pasture. The soil of this commonty being in general very good, there can be no doubt of the plantations making great progress; and whatever way it shall be occupied, it is likely to turn out a most important improvement. The advantage to individuals will be great, in proportion to the celerity of the improvement, and the spirit with which they enter upon it; and it cannot fail benefiting the public at large, as the produce of above 2000 acres of ground being doubled, or perhaps quadrupled, in consequence of individual improvement, is most beneficial, besides adding so much to the beauty of the county, when viewed from the great post roads leading from Queensferry to Perth, and from Kinghorn to Dundee, by Cupar, by the very numerous travellers on these two great thoroughfares.

24th April, 1820.

FOR THE FARMER'S MAGAZINE.

Produce of an Apple-Tree near Nottingham.

THE following account, (taken from 'Practical Hints in Domestic Rural Economy,' by William Speechley, London, Longman & Co. 1820), given by the gentleman to whom the tree belonged, though written in 1798, does not seem to have been published before; and is so remarkable, as to deserve being made generally known.

"My esteemed friend, Robert Padley Esq., has obligingly favoured me with the following surprising account of the produce of an apple-tree, now growing in his orchard at Burton-Joice, near Nottingham.

'I have just received your favour, by your son, and shall with pleasure give you all the information in my power, respecting the apple-tree he mentioned to you, which is now growing in my orchard, at this place; and if you think any part of it worthy the notice of the Board of Agriculture, you have my permission to notice it in your Report.

'The apple-tree in question, ever since I can remember, was about every other year a very great bearer; if it ever bore fruit two years together, it was not so full as if it had missed a year. The first year I ever noticed its produce, so as to ascertain the quantity, was in 1792. In that year my gardener sold, in Nottingham market, in the months of December and January, as many apples from this tree as nearly amounted to ten guineas. They were in general sold for 2s. the peck, (and by the hucksters, I was told, they were retailed for 2s. 8d. and 3s.); so that there must have been upwards of a hundred pecks sold, besides supplying my family and my mother's from Christmas, with this sort of baking apple, to near the month of May. I also gave a great many basketfuls to several of my friends.

'In the year 1793, the tree had not a *single* blossom upon it, but produced one very fine *double white* flower only; it was nearly the size of the common white rose, and almost as double; and, thinking it a great curiosity for a double white blossom to be produced from an apple-tree, that had invariably before borne single *red* blossoms, I cut it off the tree, with a small part of the branch; and Mrs Padley has taken a very good painting of it, but not at all larger than the original flower.

'In 1794, the tree was nearly as full as in 1792; and one branch was absolutely borne down to the ground with fruit. Part of this branch I was afterwards obliged to cut away, and

prop up the remainder of it. That year I sold near 10*l*. worth of apples from it, at from 1s. 8d. to 2s. the peck; besides supplying my family, &c. as before.

'In 1795 there was not a blossom upon the tree. In 1796, allowing for the branch taken off, the tree was about as full as in 1794. I sold the fruit for 7*l* 14s. at 1s. 8d. per peck; besides supplying my own family, &c. as before. I am therefore of opinion, had the whole produce of the tree been sold, for the three years I have mentioned, it would have amounted to upwards of thirty pounds.

'This apple-tree, I find by inquiry, was planted by my grandfather about sixty years ago; and I think it as good a baking apple, at this season of the year, as most that are grown in this neighbourhood; and keeps until March or April very well.

'The tree divides, near the ground, into three principal branches, which, of course, makes it spread more than if from one upright stem. The branches extend from seven to nine yards round the bole of the tree. As I do not know the name of the apple, I have taken the liberty of sending you a few of them; and you shall be extremely welcome to take grafts from the tree, both for yourself and friends.

'I have also a cherry-tree, growing in the same orchard, that covers more ground, and is much higher than the apple-tree; and, when in full bloom, (as it invariably is in the season), is remarkably beautiful. As this tree has in one year produced upwards of two hundred weight of cherries, I conclude that the soil here is particularly favourable for orchard fruits: indeed, orchards are very general in all the neighbouring villages, on both sides the river Trent, but particularly on the north side, where, at Gedling and Carlton, the cottage tenants of Lord Chesterfield and Lord Newark make the chief of their rents by their orchards.

Burton-Joice, }
February 12, 1798. } "

FOR THE FARMER'S MAGAZINE.

Rural Economy of the Highlands of Scotland.

[From a Description of the Western Islands of Scotland, &c. by John Macculloch, M. D. 1819.]

Though much has been written on the Rural Economy of the Highlands, so different in many respects from that of the rest of Britain, yet we have not seen any work of late which ex-

hibits it in so clear a light, and in so concise a form, as that of Dr Macculloch, a gentleman who seems to have had the best opportunities of viewing its details, as well as of investigating the causes which led to the present system, and also to the changes which, though not operating very rapidly, must, ere long, effect its dissolution. The subject has acquired additional importance at present, from the unfortunate occurrences which have recently taken place in two of the Highland counties, Sutherland and Ross, which, whatever opinion may be formed of the conduct of the parties immediately concerned, must be traced to the peculiar state of that part of the country as their original source, rather than to any remarkable selfishness or avarice on the part of the landholders. At the same time, according to the best accounts we have been able to obtain regarding the late disturbances in Ross-shire, it must be owned, with all deference to the rights of property, that these rights have been seldom exercised with less benefit to their possessor, perhaps with less judgment, than on that occasion. The tenants were not in arrear—they paid a higher rent than the person who is to succeed them engages to pay; and the prospect of future improvement to the estate is said to be no greater from the new tenant than from the old ones, who have been so gratuitously removed. Still there can be no doubt of a proprietor's right in such a case; but it would be well if he would take care so to act as not to let the strong claims of humanity array themselves in opposition to it. The extract we are about to make from Dr Macculloch's work, contains only an outline, but its fidelity may be relied on; and those who wish for more minute information, will find it in the Reports of the Highland Counties. To readers in the South, it may perhaps afford a better idea of the present state of those large districts, than any of those voluminous works.]

The stranger who for the first time visits this country, sees with surprise scanty crops of corn distributed in detached beds of earth which have been collected for its cultivation: or so disposed among a labyrinth of rocks that scarcely an uninterrupted space of half a rood, often of only a few square yards, is to be seen together; while the shortness of the straw and the thinness of the ear, mark the struggles which even this miserable crop has made for existence. He again sees this crop exposed to the storms of August, or drenched in the rains, perhaps for weeks after it has been cut down, and probably laments that human industry should be so far misdirected; while, like many even of the natives themselves, he will condemn any further attempts to increase or improve this department of rural economy. The

prevalence of this opinion among the natives has been one leading cause of the very evil thus lamented; since, by tying them down to the ill-conducted practices of their ancestors, it has prevented those improvements in the agricultural department of farming which more experienced observers and more enterprising cultivators have shown to be possible. It will indeed be soon perceived by any observer who will bestow attention on the subject, and abstract the effect of first impressions, that the efforts of art are in this country rarely directed to counteract the injuries, or supply the deficiencies, of nature; that it too often cooperates with them, and that, under a system adapted to the wants and peculiarities of the climate and soil, of which the severity and defects are too often overrated, improvements of a radical nature and a considerable extension of the present system may be effected. As far as climate is concerned, earlier as well as better crops will be the result of improvements in the methods of tillage; and the harvest, of which the uncertainty chiefly depends on its lateness, will be ready at a better season. A further effect also of an improvement in the system, would be a more regular occupation throughout the year; of which a great portion is now spent without employment, while at one particular season its whole accumulated labours are pressing on the farmer for attention. The introduction of green crops, for example, a necessary part of the improved or convertible system, would tend to divide the occupations of the year, and at the same time preserve the stock of the farm fit for labour when wanted. Such also is the connexion between pasturage and agriculture, that an increase in the latter will enable the insular farmer to rear a greater number as well as a better breed of cattle and sheep, and to deliver their produce to the market, not only of superior quality, but in better condition.

The ancient system consisted in producing crops of corn, either with or without manure, as that could be procured, from the richest fields; and this practice was continued till the land refused to bear any longer: Such grass or weeds as happened to grow on it, were then suffered to accumulate for a series of years, and the same process was repeated in a perpetual rotation. The natural pastures were at the same time grazed by the indigenous cattle, by which they were almost invariably overstocked to such a degree, that numbers died at the end of every winter. Finally, the farms held in run-rig, or common, were overrun with superfluous horses. Such is still the fundamental part of the present system, where better practices have not been introduced; and these are far from bearing even a tolerable proportion to the whole. Isla, Colonsa, Gigha, Sky,

Mull, Coll, Rasay, and a few tracts in the Long Island, exhibit, in fact, almost the only exceptions.

If the details of the tillage be examined, they will be found as defective as the general plan. No winter or autumnal ploughing is used; but this operation is conducted in the spring in a most inefficient and slovenly manner. The traveller who chances not to arrive until the harvest is ready, may be surprised to see so many examples of what he will imagine to be the modern drill husbandry; but will soon discover that the appearance arises from the seed having been sown after one ploughing, as mentioned in Tirey. Thus it is lodged in the furrows, where it is afterwards imperfectly covered by a bad harrow; producing a late crop, yet not a clean one, while the advantages arising from deep ploughing are neglected. Cases indeed occur of soils so light and sandy, as in Tirey and many parts of the Long Island, where neither the ground nor the seed could resist the efforts of the wind, were it thoroughly ploughed. In such cases, the interest of the farmer, as well as that of his neighbours, would be to avoid ploughing altogether, and to lay down such fields in grass. But two causes prevent this, the temptation offered by sea weed, and the smallness of farms; which compel the little tenant, who possibly has no other land but a driving sand, to procure a crop of corn from it on the best terms he can; an argument among many which will occur at every step, for a different division, and in many cases for an enlargement of farms.

It would lead into details inconsistent with the object of this sketch, to particularize the defects in harrowing, scarifying, weeding, and other operations connected with ploughing; or to notice the total absence of some, such, for instance, as that of rolling.

The reader must perceive, that under the system described, scarcely any notion is entertained of the rotation of crops, or of the advantages to be derived from it. Fallowing is not practised; perhaps it might not often be required. Where potatoes have been planted, either on old ridges or for the bringing in of waste lands, a large quantity of manure is applied: and this serves generally for the crops of corn that are to succeed, although a small quantity is occasionally used with them. Barley thus succeeds to potatoes; while that again is followed by oats for two or three, or even a greater number of years, till the land fairly refuses to yield more. In other cases, the barley is sown with manure, and the oats follow as before. Turnips, peas, beans, grass seeds, and clover, are unknown; and the art

of farming is thus at least reduced to a system which it requires but little knowledge to conduct. Not so, however, the expense, which is great in proportion to the imperfection of the modes and the scantiness of the produce. It is no diminution of the expense that it is not found in the farmer's accounts;—that his labour and the labour of his family are reckoned as nothing;—and that the keep of his useless horses does not enter into his calculation. His want of calculation would be a more appropriate term, since the slightest attention to this subject would show, that the cultivation of a few acres could never repay the expense of four or five horses and as many people, were he even rewarded with a full crop. If it be considered that his crop sometimes does not produce the double of his seed, and that four returns in oats are a good crop, we can scarcely set a sufficient price on his grain, or discover by what means he is enabled to pay any rent for the land on which his industry is thus wasted.

Besides barley and oats, a small quantity of rye is cultivated in some of the sandy islands; since a crop of this grain can be obtained after oats have ceased to grow. These crops are both short and thin.

The species of barley exclusively used is bear, which, from its early ripening and other qualities, is best adapted to the climate; and which seems not to admit of any better substitute, or of any other improvement than that of a more careful selection of the seed. The insular farmer, contrary to the general practice, and from mistaken notions of economy, makes choice of the worst part of his grain for this purpose. The same praise cannot be given to the species of oats which is in most use. This is a small dark grain, commonly called the grey oat, and it is of a most unprofitable nature. Three returns are the average produce of this grain; the aspect of which, when in a state for cutting, is such, that a stranger would often with difficulty believe that any serious designs of that nature were entertained. The seeds, or else the soil, are often so full of the Holcus avenaceus, that many square yards will sometimes occur in a field, not containing one plant of oats in the yard. Notwithstanding the small value of this grain, and the scantiness of the produce, the natives are still strongly attached to it on account of its power of resisting high winds, as it does not lose the little grain which it possesses by shaking. The introduction of a better oat would be among the first, and apparently among the easiest improvements in the agriculture of these islands.

The sickle is invariably used in reaping all grain, although the necessity of expedition in the process of harvesting, arising

from the uncertainty of the climate, would suggest the scythe as preferable, wherever the roughness of the surface does not prevent its use.

Great part of the straw is used in thatching; and the thatch, being ill applied, requires constant renewal, inducing a wasteful expenditure of this scarce and useful article. An additional waste is produced by the process of burning or *graddaning*, as it is called; used in some places for converting the corn quickly into bread. The grain is roasted while in the sheaf, in the flame of the straw; more than a third part of which is thus destroyed: the taste of this bread is agreeable, although its complexion is black; but the practice is now becoming rare. More usually the oats, like the barley, are kiln-dried in the ear, and then ground into meal. The quern is now rarely to be seen, as mills have been erected in most of the islands; but it is still to be found in some of the smaller ones, forming a most laborious occupation for the women, on whom this, as well as many other parts of the economy of a Highland family, falls. The several sorts of grain are formed into cakes in nearly the same manner, by tempering the meal with water, and toasting it before the fire;—an operation requiring a perpetually recurring and daily labour. A portion of the barley is sometimes converted into whiskey, and almost always in an illicit manner: but this trade is in a manner engrossed by certain districts, from which others are supplied by means of a fraudulent commerce; the division of labour, but little known in the islands, having found its way into this branch of their rural economy. *

The cultivation of potatoes is practised in these islands to a great extent, and with success; and the effect of it in bettering the condition of the people, and in increasing their numbers, has, as in all other instances, been very great. It is, perhaps, not over-rating the use of this root to say, that it forms more than two-thirds of the food of the people. It was not introduced without difficulty; but such a breach once made in the philosophy of a country, is an earnest of the possibility of further improvements, when sufficient arguments can be produced in their favour. Such arguments ought to be founded on example and demonstrable success; since these are the only ones which the condition of such a country admits. It is true that there are circumstances which seem at present to be a bar to any in-

* Since this was written, a change of the system of revenue, as it affects the Highland distilleries, has been effected by the Legislature. It yet remains, however, to be seen what its effects will be, as well on these illicit practices as on the state of agriculture.

novations, even though fortified with these arguments; and which Time himself, the great innovator, cannot remove till many preparatory inroads on the present system shall have been effected. But the detail of these would lead into economical discussions of wide extent, too wide at least for the brief sketch which I proposed to give.

The general mode of cultivating potatoes is in lazy-beds, as they are called; the intermediate earth being often removed, even to a great extent, on thin rocky soils or on peat mosses, and large drains being thus left between them. These beds are highly manured, generally with sea-weed, since the greater number of farms, indeed nearly the whole population of the islands, lies near the sea. The sets are dibbled in, and are in general carefully weeded; the care bestowed on this justly favoured crop forming a strong contrast to the prevailing slovenliness of the insular agriculture. Receiving this article when its treatment was well understood, the Highlanders necessarily took with it the rules for its cultivation, and no breach of ancient habits was required.

The beds which I have described are made up either by the spade or the more powerful instrument the *caschrom*, often on the bare rock; and they present a singular spectacle to the Lowland or English traveller, who for the first time witnesses this mode of culture. He will naturally revolt at what he considers misdirected industry and extravagant expense; not reflecting that the divided nature of the tenures, and the superfluity of the population, cause this waste of toil, and that such a practice is the necessary consequence of the present state of the country. An advantage at first not contemplated is also the result of this system, namely, the acquisition of much arable land from the waste; since it is by the potatoe culture that the peat mosses are brought into a state of aration. There can be no question respecting the imperfection and expense of such a system of cultivation, abstractedly considered: but the question here, as in many other cases, is not about that which is best, but that which is most suitable to the present state of the country. The enlargement of farms, and the conversion of tenants into labourers, or, what will necessarily be the other alternative, the removal of the present population, and the introduction of a more able and powerful class of tenantry, must precede the introduction of a cheaper husbandry with respect to this root, namely, the drilling and horse-hoeing system. He who has but an acre to cultivate, must cultivate it with his own hands: he who has no plough, must use a spade. The *caschrom* here mentioned is much used in Sky and in the Long Isle, and is an instrument of

considerable efficacy and power: it is rather a plough than a spade, and will perform twice as much work as the latter with the same labour. It is a singular circumstance, that an instrument so simple and so nearly akin to the plough, and at the same time of apparently great antiquity, should be limited to this country. No trace of it is to be seen among those drawings, whether Egyptian or Hindoo, which represent the plough in its most simple and original state. It would seem to have been the invention of man, where the cooperation of animals in his agricultural labours was unknown. Its advantages in this country over the plough, arises from its being applicable to the cultivation of rocky ground where a plough cannot be used, or to that of boggy and soft land where a horse cannot walk. Many districts, now in a high state of cultivation, could not otherwise be tilled; and as long as the present system continues, the *caschrom* will maintain its ground.

As the cultivation of grasses forms no part of the ancient system, the hay of the islands is the produce of natural meadows, and, in many cases, of waste scraps of land, whence it is cut and saved at a great expense of labour and time; while it is also contaminated with rushes and other aquatic plants, the usual inhabitants of such situations. Scarcely any attention, except some feeble attempts towards draining, is bestowed on the meadows; which are left as they were found, to the care of Nature. Hence their produce is deficient both in quantity and value; while the hay, being rarely secured sooner than the corn, is frequently damaged, and even the total loss of the crop, in consequence of its lateness, is not uncommon.

The cultivation of flax is carried on, but to an inconsiderable extent; and, as may easily be imagined, not in the best manner. That of hemp is still more limited; indeed it can scarcely be said to exist, since it is only occasionally seen in small patches; the produce being confined to the very limited consumption of the country, in the shape of twine or fishing lines.

The system of pasturage forms the remaining and the chief branch of the rural economy of the islands. It is evident that the high mountain pastures which constitute the principal part of the country, are in a great measure incapable of improvement; but the natives seem unfortunately to have formed the same opinion respecting the lower ones, and thus to have neglected those obvious improvements of enclosing, top-dressing, draining, or laying down to grass after occasional cultivation, by which their value would be so materially increased. The possible improvements of that which may be called waste land, may also be considered as pointing rather to an ameliorated

system of pasturage, than to agriculture properly speaking. The chief part of such wastes is moorland, formed principally of a mixed and dry peaty soil, commonly thin, and placed on a bottom of gravel or coarse clay; the produce consisting chiefly of heaths, with several coarse grasses and some mosses. Where these lands approach the sea, the growth of such plants is checked, and at last destroyed; a fine green pasture succeeding, which, under proper management, is capable of producing good crops of corn. The shores of the Long Island, wherever the numerous inlets of the sea intersect these moors, show striking examples of the fertilizing powers which the vicinity of the salt water possesses; or else of the influence which it exerts in preventing the growth of bog plants, and the consequent generation of peat. The same effects are produced by the application of calcareous manures; under which treatment the useless plants disappear, and are succeeded by clover and valuable grasses. An excellent black mould is formed in a few years when cultivation has followed that practice; and this is more particularly the case in those islands where the substratum is of trap. The same effect of converting the moorland into green pasture is produced by turning the surface, while the pasturing of cattle prevents it from returning to its primitive state. The expense is in many cases a serious obstacle to any of these modes of improvement, and, in certain situations, an insurmountable one; but they are, nevertheless, applicable to many thousands of acres now nearly useless, from which the returns would be both immediate and profitable. Those who have wandered over the brown and bare lands of Lewis, or of Sky, may easily imagine the different aspect these lands would assume, were such improvements carried into effect. That they will be effected at some distant day, there is no reason to doubt. Under circumstances of equal difficulty, of less knowledge, and as little wealth, have some of the principal pastures and cultivated lands of Britain been rescued from heath and barrenness.

With regard to the improvement of mountain land, the pasturage of sheep appears the only expedient. This is well known to banish heath, and improve the natural grasses; and the extension of this practice, which is not yet fully acted on, although its value is well understood, will ultimately do all which art will probably ever effect on soils of this description.

The methods of reclaiming peat mosses are at present perfectly known, and the experiments of many enlightened cultivators have proved that the profits are sufficiently tempting. If there are obstacles to the further increase of this kind of improvement, they must be sought for, not in want either of

knowledge of the means, or of conviction of their efficacy, but in those circumstances in the condition of the people, the deficiency of capital, the smaliness of the possessions, and the want of secure leases, which in every situation must be impediments to improvement. The introduction of the potatoe system has, even in the hands of the smallest tenants, led to the improvement of much peat land, as I already remarked; for here the reward immediately follows the labour; while the means, as far as to the extent yet tried, are in the hands of every one. He who has made the first step has overcome his inertia, and will easily be induced to make a second, if he has the means to make it, and a continuation of the stimulus is held out to him. Much has been already effected in favour of the Highland tenant by the division of farms, which has for the first time given him an interest in his possessions, and has also served to demonstrate to him how much his prosperity is connected with his industry. Under the crofting system much land will yet be reclaimed; but it is plain that nothing short of a greater capital, larger possessions, and longer security, can do much for the lands that are yet in a state of nature. These are the leading wants of the system. It must be added, that there is an obvious want of industry in the character of the small Highland tenants, although much paradoxical and contradictory matter has been brought forward on this subject, by contrasting their apparent indolence, their neglect of the most simple and obvious improvements of their comforts and of their condition, with the activity and perseverance which they occasionally show in other pursuits. As an excuse, it may indeed be admitted, that there can be no exertion without a motive, no industry without a good to be obtained, or an evil to be shunned. A great part of the indolence of the inhabitants is the consequence of a positive want of occupation; much more of it arises from the absence of wants, from contentment with their present situation. It is not too strong a statement to say, that discontent is the basis of all human improvement; the motive to action, without which man would yet have been feeding on acorns, and clothing himself in skins. The first step towards the improvement of the country, is to excite wants; and this must be the result of local example, or of a freer communication with more enlightened countries, and a knowledge of more accumulated comforts. Little of this example exists in the remote islands; in which the want of communication is also, from various circumstances, almost complete. In the vicinity of towns, and of the improving countries, the change is palpable and rapid. It would not be difficult to point out means by which its progress could be accelerated, in

the remote districts; but the discussion would carry me beyond the bounds proposed in this sketch.

It is well known, that the rearing of black cattle for exportation, forms the basis of the pasturage of the islands. These are almost invariably exported in a lean state, and are generally purchased on the spot by itinerant drovers; the risk and expense of freight making, in many cases, a serious deduction from the value of the animal. No attempts have been made to fatten stock for salting; a plan which, with great probability, might in many of the islands be adopted with advantage. Nor is there any system of dairy farming, further than is required to meet the current demands of the cultivator himself; since neither butter nor cheese can be said to form articles of export. The want of winter food is indeed, from the defects of the agricultural system, an obstacle to these practices; and it is a serious detriment also to the very system of exportation, under which their cattle are at present reared. In consequence of it, many animals die in winter; and even those which survive are, at the return of spring, so reduced as to be of far less value, even when made fit for travelling and exportation, than they would be under a better plan of feeding. The cultivation of artificial crops, and a system of enclosure and division, are the obvious and necessary preliminaries to any amelioration in this department of insular farming. The breeds of cattle are small, and do not materially vary in the several islands; except where they have, in the improved ones, experienced recent attention: And it seems generally thought, that they are not susceptible of any exchange for the better, nor of any other amelioration than such as may be founded on a good selection of individuals. Compared to the breeding of cattle, that of sheep must be considered as a modern improvement, or an innovation upon the ancient system. Formerly, this animal was only reared for domestic consumption; and St Kilda is now the only island where the ancient breed, supposed to be of Norwegian extraction, is still to be seen retaining exclusive possession of the soil. This wretched race is nearly extirpated everywhere else, having given way to that variety known by the name of the Tweedale breed; the Cheviot having been as yet but partially introduced, and not being at present expected, from the circumstances of the climate, to gain an extensive footing. * The deficiency of win-

* The sheep farmers of Sutherland are now of opinion, that this variety is perfectly adapted to the climate of the Highlands, and that its more extended introduction will be an essential improvement of the present system.—*August* 1818.

ter food is the principal defect in the sheep farming, as it is in the case of the black cattle; but in both there is a still more serious evil in the management, namely, the overstocking of the farms. This excess in the numbers, both of the sheep and cattle, is visible almost everywhere; and its results are such as might be expected. It will naturally subside as joint farms become divided, and small ones consolidated, by the spreading of improvement; besides that it will gradually cease to be felt as the cultivation of winter food increases. The opinions respecting the propriety of an increase of sheep-farming, have been unfortunately so much connected with the notions of depopulation and emigration, and with all the ill-founded prejudices which these odious terms scarcely ever fail to produce, that the introduction and extension of this practice have always had to contend with a host of obstacles and difficulties, here, as in every instance where it has first been adopted. The progress of agricultural improvement in England, as well in this case as in other endeavours to change the ancient habits, is only the prototype of that which is here but beginning. It is superfluous to discuss the advantages already derived from sheep-farming; the subject is indeed too trite to require notice; but it is proper to remark, that, in some of the islands under consideration, it is deservedly less an object of attention, than in the mountain farms of the main land, or of those islands which lie near its shores. The sheep does not bear sea-carriage well, and is therefore a commodity of far less easy transport than cattle: Fortunately, there is not a very large proportion of the Long Island (the only tract from which the transport of sheep would be difficult), that would be more advantageously occupied by sheep, than it is by cattle.

Few circumstances in the system of Highland farming are more remarkable to a stranger, than the enormous number of horses kept; a practice, however, which is fast expiring. It is a moderate statement to say, that there are three times more than are necessary; since there was recently a common farm, even in Sky, possessing forty horses, where the whole work might have been performed with six. Tirey lately contained fifteen hundred; a number probably ten times greater than its real wants; but these have been much reduced by means which, however unjustifiable, it is unnecessary to detail. Of the causes which have led to this wasteful superfluity, some have been unavoidable; while others, having been the result of bad practices now disappearing, are themselves vanishing without specific remedies. The want of carriage roads, and the transport of peat from the hills and of kelp from the shores, must still, as they

have always done, produce a necessity for a greater number of horses than would be required if carts could be used. Their inefficacy for labour, arising from their bad condition, and from their want of stature and strength, also add to this necessary number a proportion which would be materially reduced, if a better fed and stronger race was adopted. The division of the land into small farms leads here also, as it has everywhere done, to an unnecessary multiplication of them; the number required on a small tenement being equally capable of doing the work of a larger one. In a greater degree, this excess has resulted from the possession of common farms; every joint tenant, from pride or rivalship, thinking it necessary to keep as many horses as possible, whether he has work for them or not. It has arisen in some measure, also, from the undefined value of land, when thus held in common; it seeming seldom to enter into the conception of the small tenant, that a given portion of land could feed but a given number of animals, whether held in common or not, and that the diminution of the stock of his useless animals would enable him to increase that of his useful ones. The crofting system, where every man's lot is visible to himself, has tended to facilitate his conception of the value of land, and to make him economize that of which he can now see the extent and powers; and it has thus aided to diminish, in a great measure, this preposterous evil. The breed of horses in question, however deficient in strength and weight for agriculture, is well known for many useful qualities, and for its adaptation to the climate. Those of Tirey were noted for their beauty, as well as their small size; but they have been exterminated by the violent means above alluded to. When carefully managed and selected, the Highland horses admit of great improvement; but are injured materially by want of food and shelter, and by other modes of ill treatment. They are sometimes shod on the fore feet, often not at all; yet, when habituated to it, will travel without injury over the most stony roads, the feet acquiring an unusual degree of hardness, and justifying, as well as the practices of the ancients, the notion that the shoe may in many cases, and under certain systems of work, be entirely dispensed with. Many of the islands, and among these Tirey and Coll, do not even possess a shoeing smith. There is no regular system of breeding for exportation, unless it be in Isla and Jura; and even in these it is not carried to any extent. A few are taken from Sky and Mull by the Irish, but they seem rather to be the last remains of those which are fast becoming unnecessary for the country; and which, though they may still be propagated for a time till the improvements are fully adopted, will probably soon altogether cease to be produced.

Asses and Mules are unknown in these islands, although they would probably be found of use as substitutes for horses, from their greater facility of feeding.

Goats have nearly disappeared; and the few that are yet to be seen appertain generally to wealthy tenants, rather as objects of variety or of amusement than profit.

The neglect of swine appears a radical defect in the farming systems of this country, since the sea-shores and the unlimited power of cultivating potatoes would render them a valuable stock. I may also add, that rabbits are absolutely unknown; a neglect which is very striking, since innumerable insular situations, capable of being converted into warrens without expense, would render them objects of profit in the commerce of peltry, as well as a welcome addition to the meagre and limited catalogue of a Highland tenant's food.

There are few things more remarkable to a stranger who has been accustomed to the cottages of the South, than the total want of gardens, or even of any cultivated vegetable beyond the potatoe. It is not an exaggeration, I believe, to say, that there is not a culinary vegetable in the country except in the establishments of the proprietors and principal farmers; nor are even all these exempt from censure for their neglect of this department of rural economy. The facility with which this most simple improvement might be introduced, and its total absence, seem unaccountable: but it is disagreeable to proceed where there is more to censure than to praise.

North Rona.

[In the same work, we have the following singular picture of one of the British Islands and its inhabitants.]

Some years have now past since this island was inhabited by several families, who contrived to subsist by uniting fishing to the produce of the soil. In attempting to land on a stormy day, all the men were lost by the upsetting of their boat; since which time it has been in the possession of a principal tenant in Lewis. It is now inhabited by one family only, consisting of six individuals, of which the female patriarch has been forty years on the island. The occupant of the farm is a cottar, cultivating it and tending fifty sheep for his employer, to whom he is bound for eight years; an unnecessary precaution, since the nine chains of the Styx could afford no greater security than the sea that surrounds him, as he is not permitted to keep a boat. During a residence, now of seven years, he had, with the exception of a visit from the boat of the Fortunée, * seen

* Then employed in cruizing after the President in 1812.

no face but that of his employer and his own family. Twice in the year, that part of the crop which is not consumed on the farm, together with the produce of the sheep and the feathers obtained from the seafowl which he is bound to procure, are taken away by the boat from Lewis; and thus his communication with the external world is maintained. Fortunately he seemed to care but little for any thing out of the limits of his own narrow kingdom.† In addition to the grain and potatoes required for the use of his family, he is allowed one cow, and receives for wages the value of two pounds Sterling annually in the form of clothes. With this, the family, consisting of six individuals, must contrive to clothe themselves; how they are clothed it is scarcely necessary to say; covered they are not, nor did there appear to be a blanket in the house; the only substitute for a bed being an excavation in the wall, strewed, as it seemed, with ashes and straw. Besides the produce of the farm, they are supplied with animal food, in the seafowl and in the small coal fish (cuddies) which are taken with the rod; and thus, with all their disadvantages, are sure of abundant food, that with which their countrymen in the situation of small tenants are not always provided. At such a price is here valued the labour of three individuals, for which the farm finds full employment.

The soil is of a good quality, and produces barley, oats, and potatoes. The average surplus of corn remaining beyond the consumption of the family was stated at eight bolls of barley; and this, united to the produce of the sheep, and an annual supply of eight stone of feathers, is, to the tenant, the value of North Rona. To him, who is one of the tacksmen of Lewis, the land is let for two pounds a year.

There is no other water in the island than that which is collected in pools from the rain; but there is no chance of any deficiency in this article. As there is no peat, turf is used for fuel, and the oil of the cuddy for light; but, with characteristic improvidence, there are no means of lighting the fire should it ever be extinguished. Well may the vestals of this cottage watch the smoky embers and trim the dying lamp.

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† On the appearance of our boat the women and children were seen running away to the cliffs to hide themselves, loaded with the very little moveable property they possessed, while the man and his son were employed in driving away the sheep. We might have imagined ourselves landing in an island of the Pacific Ocean. A few words of Gaelic soon recalled the latter; but it was some time before the females came from their retreat, very unlike in look to the inhabitants of a civilized world.

Such is the violence of the wind in this region that not even the solid mass of a Highland hut can resist it. The house is therefore excavated in the earth, the wall required for the support of the roof scarcely rising two feet above the surface. The roof itself is but little raised above the level, and is covered with a great weight of turf, above which is the thatch; the whole being surrounded with turf stacks to ward off the gales. The entrance to this subterranean retreat is through a long, dark, narrow and tortuous passage like the gallery of a mine, commencing by an aperture not three feet high and very difficult to find. With little trouble it might be effectually concealed; nor, were the fire suppressed, could the existence of a house be suspected, the whole having the appearance of a collection of turf stacks and dunghills. Although our conference had lasted some time, none of the party discovered that it was held on the top of the house. It seemed to have been constructed for concealment from white bears or men more savage still, with a precaution now at least useless. The interior strongly resembles that of a Kamschatkan hut; receiving no other light than that from the smoke hole, being covered with ashes, festooned with strings of dried fish, filled with smoke, and having scarcely an article of furniture. Such is life in North Rona; and though the women and children were half naked, the mother old, and the wife deaf, they appeared to be contented, well fed, and little concerned about what the rest of the world was doing. It was still an object of curiosity to ascertain if beings so insulated had no desires to return to society and mingle once more with their fellow-creatures. But though man is gregarious, the want of extended society is in a great measure the want of cultivated minds. Here the family was society enough, and to provide for the demands of the impending day, sufficient occupation. The inferior members of it seemed to know of no other world than North Rona, and the chief appeared to wish for little that North Rona could not supply. The only desire that could be discovered after much inquiry, was that of getting his two younger children christened; and for this purpose he had resolved to visit Lewis when his period of residence was expired. I need not say to those who know the Highlanders, that their sense of religion is not limited to externals. Amid his solitude this poor man had not forgotten his duties, though excluded from the advantages of their social forms. Yet I shall not be surprised if, after the accomplishment of his only wish, he should again long for his now habitual home: and expect that some future visitor will, twenty years hence, find Kenneth Mac Cagie wearing out his life in the subterranean retreat of his better days.

BRANCH II.

Review of Agricultural Publications.

Art. I. *A New System of Cultivation without Lime, or Dung, or Summer Fallows, as practised at Knowle Farm, in the county of Sussex.* By Major-General Alexander Beatson, late Governor of the Island of St Helena. and Honorary Member of the Board of Agriculture. London, 1820.

This is the most extraordinary book that has appeared on agriculture since the days of Jethro Tull, to which the gallant General is no unworthy successor. These eminent persons agree in most points; and, where they differ, the advantage seems to be clearly on the side of the modern author. Like Tull, he is a great advocate for the perfect pulverization of the soil for all sorts of crops; thinks but meanly of the use of dung for arable lands, to which he has ceased to apply it; and, after taking two or three crops of wheat in succession on the same field, has little doubt of being able to repeat the same crop, without any other manure than a little burnt clay, for 13 or 14 years, with as much advantage as his prototype. The coincidence between them is also remarkable in another respect. If we recollect right, Tull nowhere gives us a very distinct account of the quantity of his produce per acre, but contents himself with showing the superiority of his method, on the score of expense, to the practice of his contemporaries; and this is precisely the ground taken by the present author. He does not allege that he renders the soil more productive than his neighbours do, but that he obtains the same quantity at a much less cost of manure and labour—in the case of wheat, in particular, at less than a third part of that cost. The average produce of wheat in Sussex, he assures us, leaves about two quarters an acre for the market; and this new method does not profess to increase this quantity, which is less by about 50 per cent. than what is brought into the general consumption from land under a good system of cultivation. It is of some importance to keep this fact in view, because we may venture to doubt, in case the comparison had been made between the new method and a better system than that of Sussex, whether the advantages of the former to the nation might be quite so much as thirty-five millions Sterling, or 3*l.* 10s. an acre on 10 millions of acres.

In one point, however, the gallant General is clearly entitled to be set above Tull, and every other writer of every nation. He has found that the plough, that venerable implement, which, under a variety of forms, has descended to us from the remotest antiquity, is of no real utility in the process of cultivating the soil; and it is accordingly no longer used at Knowle-Farm, in the county of Sussex. All the long established opinions as to the advantages of bringing up a portion of fresh soil, which have occasioned so much labour in trenching and trench-ploughing, and of exposing to the atmosphere that part of the usually cultivated soil in which the roots and seeds of weeds spread and flourish in spite of the horse and hand-hoe, must now be held as utterly groundless; for the simple implement employed by the author, though working in the dark, beneath the surface soil, is, as we shall see immediately, infinitely more effective than the plough, not only in pulverizing the soil, but in eradicating the most deep-rooted weeds. But in a matter of such importance as this, where it is so necessary to convey a clear idea of the *modus operandi*, it will be safest to use our author's own words; and we shall therefore endeavour to present an epitome of his book, for the edification of our readers.

The first chapter is 'On Manuring Lands;' but contains a good deal of introductory and miscellaneous matter; much of it of a speculative rather than a practical nature; and which may, therefore, be passed over as throwing no light on this 'New System.' Among other matters, we are informed, that it is upwards of twelve years since the author turned his thoughts to farming; but he had scarcely begun his experiments, when they were interrupted by his appointment to the government of St Helena. In this situation, however, he was not inattentive to similar pursuits, having effected a very happy change on the agriculture of that island; and published the fruits of his experience, for more general use, in his 'Tracts on St Helena.' He returned to England in 1813, and it is from this period that the New System dates its origin; though it was not brought to perfection at once, but progressively, during the last five years. His 'first experiments were conducted upon a small scale, of 'one or two square rods to each;' as he 'knew that what succeeded upon a small scale, was likely to answer upon a larger:' But, at last, he 'ventured upon twenty acres of wheat;' and 'one new scheme succeeded another, until the superiority of 'the whole system was manifested by the display of crops of 'wheat, by no means inferior to those which had been raised 'by fallowing and liming, at a threefold expense; for mine cost

'not more than five pounds, whilst theirs cost them at least 'fifteen or sixteen pounds per acre.' So much for the origin, the extent, the duration, and the general result of this new system; from all which we learn, that it has been tried upon a small portion of a small farm, for a period not exceeding five years.

'The long established rotation in this part of Sussex,' says General Beatson, 'is, 1. Fallow and lime; 2. Wheat; 3. Oats; '4. Clover and ray-grass; and not unfrequently, during the 'fifth year, the clover and ray-grass remain.' The whole expense of the fallow and wheat years, according to this plan, is said to be 16*l.* 4s. an acre; of which, labour amounts to 4*l.* 3s., manure (lime) 7*l.* 10s., and rent and taxes for two years 3*l.* —It is with this sort of management, in which, every fourth or fifth year, there is an expense of 7*l.* 10s. an acre incurred for lime, that the new system, as we have already observed, is always compared.

As a substitute for lime, the author first tried Lord Meadowbank's compost of peat and dung, and afterwards 'burnt marl;' which, containing a portion of calcareous matter, was expected to produce a similar effect to lime; but 'fortunately,' adds the General, 'just at the time I was engaged in these researches for 'a substitute for lime, a friend in Scotland sent me Mr Craig's 'papers on the subject of burning clay;' and this has been found to answer the purpose in the most effectual manner. The usual quantity applied is 320 bushels an acre, which does not cost more than 20s., instead of 7*l.* 10s. which is the cost of the lime. Hence, by this single discovery, there is a saving of 6*l.* 10s. an acre out of the 16*l.* 4s. incurred by the Sussex farmers in the cultivation of wheat.

The Second Chapter is 'On the Abolition of Fallows;' but the title does not always give a correct idea of the nature of the contents; of which we may give the following example, which is of importance in itself, as it shows the folly of a pretty common opinion, namely, that experiments upon a very small scale ought not to be depended on in general practice.

'Some of my most valuable experiments were made on spaces of 'only a rod square to each. Upon this small extent may be ascer-'tained, with sufficient accuracy for any practical purpose, the 'relative effects of a fallow or no fallow—of deep or shallow plough-'ings—of cloddy surface or fine pulverization—of one stirring or 'of frequent stirrings of the soil—of thick or thin sowing, and of 'all the various sorts of manure within reach of the estates upon 'which those experiments may be made. In short, I know, from 'twelve years' experience, that there is no point in practical agricul-

'ture which could not be decided in this manner, without entering 'into long, and sometimes angry discussions, which only serve to tire 'and perplex those who read them.

'I have often been asked—"Has your mode of farming been ad-"opted? Do the farmers come into it?" The answer is obvious '—that a farmer has no inducement to adopt new plans, and there-'fore is perfectly satisfied with the old. Besides, under the condi-'tion of the leases, however much he may be convinced of the ad-'vantages of a new method, or however desirous he may be of imi-'tation, he dare not attempt it—He must adhere to fallows—to lime '—and to the whole expensive routine laid down for him, otherwise 'he is liable to certain penalties expressed in the lease.'

These are very bad leases, no doubt; but surely there must be exceptions; and if there be, it does not seem quite clear that a farmer has no inducement to adopt a very simple change which, in the article of manure alone, would save him 6*l.* 10s. an acre. It appears, by our author's own account, indeed, that burnt clay has actually been tried, though with what success does not appear, by some of the farmers in these parts.

But, with regard to fallowing—the causes which render this expensive operation necessary, seem to be two; 1*st*, broad-cast sowing; and, 2*d*, the application of dung to arable land for corn crops: but chiefly the latter. On this point, the experience of the author is perfectly satisfactory; though we are at some loss to understand why the 'rot dung,' in the following quotation, afterwards turns out to be litter 'not sufficiently rotted.' But one thing is sufficiently certain, namely, that 10 loads of ashes will produce a much better crop, than 40 cart-loads of 'rot dung.'

'In a small field of wheat, where I had four burnt-clay experi-'ments, around which was a space unmanured, and, beyond it, all 'the rest of the field manured with rot dung, at the rate of forty 'cart loads per acre, and the whole scarified, harrowed, and drilled, 'exactly in the same manner—those clay experiments maintained a 'very striking superiority during the growth of three successive 'crops:—the first was a mixture of oats and tares, and the second 'and third were wheat.

'At the time of reaping the wheat this year, the four experi-'ments, which had respectively at the rate of ten, twenty, thirty, 'and forty cart loads of clay ashes per acre, were all greatly supe-'rior in produce, and perfectly clean and free from weeds; whilst 'the dunged part was absolutely choked with knot and other grass-'es, and vastly inferior in produce, although the whole had been 'twice hoed during the growth of the crop. So very foul was the 'dunged part, when the crop was reaped, that each sheaf appeared 'to consist of, at least, a quarter part of those grasses, and weeds. 'Fortunately, this was but a small patch of two acres: It was the

'only dunged part of fifty acres of wheat, and the only field that was 'this year infested with these grasses and weeds.

'I ascribe the foulness of this dunged wheat, to the farm yard 'having been littered with fern, and those grasses; and to this litter 'not having been sufficiently rotted at the time it was carried to 'the land.'

By the entire abolition of fallows, which occupy, we are told, 2,400,000 acres in England and Scotland, somewhere about 48 millions Sterling might 'be added to the great fund or capi-'tal of the kingdom, without any expense whatever;' and this is a matter of such importance, as the gallant General truly observes, that he is 'not without hopes it may attract the parti-'cular notice and attention of his Majesty's government; and 'that some measures may be speedily adopted for putting down '*opinions*, and a ruinous practice, totally at variance with posi-'tive and incontrovertible facts.' The means of effecting so desirable a change, in his opinion, are '*the institution of small* '*experiments throughout the kingdom, under the superintendence* '*of the land proprietors.*'

Hitherto we have no very clear view of the operations that are to supersede fallowing; but the Third Chapter, which treats of 'Preparing the land for the Seed,' may throw some light on this matter.

'I shall now proceed,' says the author, 'to explain the alterations I have introduced for preparing the land,—by which I can 'easily and expeditiously obtain a more minute division of the particles of the soil than can be produced by the plough and harrow. 'Instead of waiting from harvest until the following seed-time, and 'wasting, as my neighbours do, the labour of my teams in ploughing and reploughing unproductive land, I prepare for the winter 'sowing; and have the fields appropriated to wheat, and winter 'tares, all in readiness for the seed, in the course of a few weeks 'after the preceding crops have been removed. This I am enabled to do by using the plough very sparingly, and sometimes not 'at all.'

The great point is fine pulverization; and 'in my endeavours for the attainment of this object,' he observes, 'I soon perceived, that, by the usual mode of *deep and frequent ploughings*, 'there was scarcely a possibility of reducing strong clayey lands, 'such as mine, to that degree of fineness required for the drill. A 'respectable and intelligent landholder in this neighbourhood, when 'I mentioned to him my intention of practising the drill-husbandry, 'told me "it would not do—he had given it a trial—and gave it "up, because he could never get his land fine enough."

'After considering what might be the cause of this failure, I inferred that those deep and frequent ploughings were injudicious: 'too much was attempted at one operation: that the first ploughing

'not only buried the seeds of weeds beyond recovery, which had 'fallen on the upper surface, but brought up immense slags—which 'being cut transversely by the second ploughing, left the field co-'vered with huge clods, in which were securely locked up some of 'those seeds which had no chance of vegetating until the close of 'the fallow; consequently their progeny, which it was intended by 'the fallow to destroy, would have equally the benefit of all these 'laborious and expensive operations of the fallow, and of the ma-'nure, as the wheat itself—and would grow with it, and rob it of a 'part of that nourishment, which it would have had, if those robbers 'of the soil had been destroyed before they came into existence, or 'as soon as they showed themselves. The best mode of bringing 'them forward for the purposes of destruction, is to loosen them 'from their prisons, and to destroy them by fire in their embryo 'state; and to give those which may have escaped, some chance of 'vegetating by a fine tilth, before the crops are put in the ground.

'But to obtain this requisite fineness of tilth in an easy and ex-'peditious manner, appeared, at first, a matter of some difficulty. 'I had at this time a field of five acres, which had remained in fal-'low five months. It had received only one ploughing, and had no 'manure after the four preceding crops. Early in March I was 'about to prepare it for oats. I was advised to plough it; but as 'the slags were at that time as hard as a brick, it was very evident 'that the whole surface would be immediately converted from 'smooth slags into large clods—which it would be almost imprac-'ticable to reduce by any means—unless they were a little soft-'ened by rain: moreover, I conceived, that by ploughing at this 'time, a raw unmellowed soil would be brought up, and the surface, 'which had so long been exposed to the beneficial influences of the 'atmosphere, would be buried; so that the advantage it had gained 'by that long exposure, would be almost entirely lost.

'For these reasons I resolved to pulverize the slags by other 'means. It was a work of great labour; for I had at that time no 'other suitable implement than the brake or heavy harrow. At 'length, however, I succeeded, after five days labour of eight oxen 'and one horse to the brake, and two horses to a pair of harrows, 'in reducing this stubborn field almost to dust. The expense of 'man and cattle labour was 31*s.* per acre.

'The oats were sown broad-cast, and yielded as fine a crop as was 'then to be seen in this neighbourhood, to the surprise of some of 'the farmers, who predicted, that as the land had not been manur-'ed, it would not yield even the quantity of seed sown.

'So manifest a proof of the beneficial effect of a fine pulveriza-'tion, determined me to try if some means could not be devised for 'obtaining it at a less expense.

'In preparing this oat-field, I had at first used the brake merely 'by dragging it in the usual manner. Afterwards it was equipped 'with two stilts, or handles, which gave it greater power: but I ob-

'served, when the hindermost tines were inserted in the soil by the 'pressure on the handles (by the man who held and directed the 'brake), many of the foremost were thrown out, and consequently 'had no effect.

'It was then I first perceived the imperfection of this implement; 'and that, however effectual it may be on light soils, it is not adapt-'ed to the heavier sorts. This imperfection arises from there being 'too many tines, or points of resistance, interfering one with ano-'ther. In general, the number is thirty-six—which are in fact so 'many resting points—bearing the whole weight of the implement.

'Now, if we suppose this whole weight to be 720 pounds, the 'weight on each tine will be no more than 20 pounds, which can 'produce but little effect on any hard surface. To increase this 'weight (or power) on the tines, it was only necessary to reduce 'their number. It is upon this principle I have constructed my 'small scarifiers. They have no more than seven tines, inserted 'nine inches apart, upon two parallel lines, at the distance of 15 'inches, by which the power is not only more concentrated, but 'very greatly augmented; for, if we suppose the same weight, of '720 pounds, acting or pressing upon those seven tines, it is evi-'dent that, instead of 20 pounds, the force, or pressure on each 'tine, will be $102\frac{6}{7}$ pounds, or one-seventh of 720.'

It does not detract much from this ingenious discovery, that the gallant General seems to have taken the hint, that deep ploughing was but a clumsy and ineffective operation, either from those skilful people the Indians and Chinese, or from an apothegm of Dr Johnson; though it is very candid to refer to such authorities as nobody would have thought of consulting, for the purpose of detecting him, had he claimed the whole merit of it to himself. 'The whole secret,' he says, 'consists in '*petty operations incessantly continued, which in time surmount* '*the greatest difficulties.*'

There would be a great saving of animal labour, we are assured, if these petty operations were performed even by the plough, taking a furrow of only 3 inches, for example, instead of six, and then getting down three inches deeper by a second ploughing; for it must be observed, that to plough to the depth of 6 inches, requires 4 horses in Sussex; but in the methods he adopts 'for attaining a minute division of the particles of the soil, 'the plough is but little used, and sometimes not at all. The chief 'use to which it is applied is in baulk-ploughing, with two horses, 'at the rate of three acres per day with one plough:—furrows, 27 'inches apart, and about 4 inches deep, are opened all over the 'field, which prepare them for the small scarifiers. These, by twice 'passing across those furrows, loosen all the stubble and roots of 'weeds, which are afterwards collected with a small portion of the 'soil, by a rake six feet in length, drawn by two horses. At fa-

'vourable opportunities, when the weather is dry, the whole of this 'rubbish is placed in heaps, 33 feet, or 11 paces asunder, and the 'stubble being laid on the windward side and kindled, the flame 'acts with nearly the force of a blow-pipe, and speedily reduces the 'whole to ashes. By arranging the heaps at the distance of two 'rods, it becomes easy to compute the quantity of ashes thus ob-'tained per acre. The ashes are spread as soon as possible, and the 'land is again twice scarified (and sometimes once harrowed after-'wards), which completes the pulverization, and renders the soil in 'a fine condition for receiving the seed.

'This mode of preparing the land, (as will presently be shown), 'does not require more than *one-fourth* of the animal labour which 'is usually applied by the neighbouring farmers in working their 'summer-fallows, and completing their seed time.'

Even this baulk ploughing, or ribbing, as it is called in the North, is found to be unnecessary. 'The scarifiers are, in 'most cases, sufficient for pulverizing the soil;' and so they must be, if it is pulverized at all; for this sort of ploughing, which leaves more than half the land unstirred, certainly can contribute very little, if any thing, to produce a fine pulverization.

The implements employed are next described; but for them we must refer to the book itself, and the plates. The most important one is the scarifier, drawn by one horse, which performs a variety of operations, at the rate of three acres per day; and, by means of these, an acre of wheat after clover ley, costs in all only 5*l.* 2s. 5d., of which the expense of *pulverizing and drilling* amounts to 1*l.* 1s. 5d. But as this includes one ploughing, for which two additional scarifyings are now substituted, making five scarifyings in all, the expense is thereby reduced to 4*l.* 13s. 9d., or 8s. 8d. less than the sum as given from the Table. Such is the expense of an acre of wheat after clover ley: After wheat, it is 4*l.* 2s. 7½d. (for the practice, it seems, is to take wheat after wheat in the new system); after tares, beans or peas, it is 4*l.* 15s. 10½d.; and after potatoes only 2*l.* 17s. 9d.—the seed, rent, and taxes, being included in each of these sums. If barley or oats be taken after wheat, the expense is 3*l.* 4s. 7d. But the vast superiority of this new system over the Sussex practice will be seen at once, in so far as regards wheat, by the following summary.

'In the preceding examples of the culture of wheat, I have sepa-'rated the operations of *pulverizing and drilling* from the other charg-'es, in order that a comparison might be made between the old and 'new methods of preparing land and putting in the seed.

'By referring to page 17, it will be seen, that the expense of la-

'bour bestowed upon an acre of wheat, according to the old Sussex 'practice, is - - - - L.4 3
'To which add rent and taxes for the year of fallow
' (which belong to the preparation) - - 1 10

' Total expense of preparation and sowing L.5 13 per acre.

'According to the four preceding examples in the cultivation of 'wheat, the expenses of preparation and drilling by the new method 'are thus—

'No.	L.	s.	d.	
'1. Wheat after clover and ray-grass, the land ' ploughed once - - -	1	1	5	per acre.
'2. Wheat after wheat - -	0	11	10¼	ditto
'3. Wheat after tares - - -	0	11	10½	ditto
'4. Wheat after potatoes - - -	0	7	9	ditto

'This comparison shows that there is a clear saving of about five 'pounds per acre by the new method of preparation and putting in 'the seed.

'By the operations of the scarifiers, without the aid of roller or 'harrow, the land is reduced to a finer degree of pulverization than 'can be attained by repeated ploughings and harrowings. This ef-'fect is produced with a rapidity, facility, and economy, that the 'customary method of cultivation does not admit of. The fields des-'tined for wheat are all got in readiness for the seed within a few 'weeks after harvest: whereas by the old method, the fourth part of 'a farm is generally left unproductive for a whole year, before the 'new crop of wheat is put in the ground. From all these circum-'stances, added to the great difference between manuring at 20 shil-'lings per acre instead of 7*l.* 10s., it is not surprising that the differ-'ence of expense between the old and this new method should be so 'very great as will appear in the following comparison.

'By the detail in page 17, the expenses of cultivating wheat, ac-'cording to the old Sussex mode, are 16*l.* 4s. per acre. The fol-'lowing abstract shows what they are according to the new method, 'and also the difference, or saving upon each acre of wheat.

	Total expense of new mode of cultivation per acre.			Difference or saving per acre by the new method.		
	L.	s.	d.	L.	s.	d.
'Example 1. Wheat after clover -	4	13	9	11	10	3
'2. Wheat after wheat - -	4	2	7½	12	1	4½
'3. Wheat after tares -	4	15	10½	11	8	1½
'4. Wheat after potatoes -	2	17	9	13	6	3

The Fourth Chapter is 'On the Advantages of Pulveriza-tion;' and, *first*, with regard to the *time* in which this opera-

tion may be performed by means of the scarifiers, we have the following satisfactory experiment.

'Having often observed that a small scarifier, with a single horse (taking with its tines a breadth of 27 inches), easily passes over three acres a day, and that this operation performed three times, upon arable land, produces a good depth of pulverization, particularly when the land is a little softened by rain, I resolved to make an experiment, for the purpose of ascertaining the possibility of speedily obtaining all the objects of a fallow, and of four ploughings, of an acre, *with the power of only one horse for one day,* for each acre, instead of *twenty.*

'The result has been, that a very good tilth is absolutely attainable on light lands, after three scarifyings, and at the expense of five shillings per acre; but on a stiffer soil, the power I used, in the autumn of 1818, in preparing for wheat after tares, was that of $1\frac{1}{2}$ horse for one day; so that, the expense of this mode of preparation was, *eight shillings and fourpence per acre.*

'A field of two acres was allotted for this experiment. One-half was baulk-ploughed, twice scarified, and harrowed once. The other half was entirely prepared by the small scarifier, which, after five scarifyings, produced as fine a tilth as that which had been baulk-ploughed and scarified. Two bushels of wheat, per acre, were drilled. No difference was perceptible during the growth of the crop, nor at the time of reaping. Throughout the whole field, it was even more exuberant than any of my other crops: and this is the more surprising, as the land had received no manure after the three preceding crops. It yielded 460 sheaves of 30 inches in circumference per acre; whilst the average produce of the other fields did not exceed 360. This superiority I ascribe to the very fine pulverization of the soil.

'The result of this experiment clearly proves, that the least expensive method of preparing the land for wheat, after tares, beans, peas, or clover, is simply by using the scarifiers.'

In the next place, as to the *depth* at which the scarifier may be made to work, and the completeness of its effect in producing a fine mould.

'I lately made an experiment with a one-horse scarifier, in order to ascertain the depth to which it would penetrate the land. The soil was stiff, and had been previously baulk-ploughed and twice scarified. When it had received six additional scarifyings, the tines had gone to their utmost depth, that is, ten inches. Thus, the objections started by the neighbouring farmers, to the use of such light implements, were completely refuted; for, by the power of one horse, a greater depth of pulverization was obtained by eight scarifyings, than by any plough with four horses, and at a much less expense.

'To produce a sufficient depth of tilth upon strong stiff land, I

'will suppose, in some cases, it may be necessary to scarify six times. 'The expense of these repeated operations would be no more than 'ten shillings; since it is only two days work of one scarifier, at five 'shillings for the day-labour of a man, a boy, and a horse; and this 'perfect pulverization of an acre is in this manner attained with the 'labour of only two horses for one day.

'Moreover, the land after those six scarifyings, would be loose 'and porous, and in the finest condition for allowing the atmospheric air to introduce itself amongst the minute particles of the soil—'for permitting the rain and dews to spread equally, and for giving 'to the roots the facility of entering into all the cavities.

'Very different from this would be a clodded surface after three or 'four ploughings: Perhaps, towards the close of the fallow, or after 'the last ploughing and rolling and harrowing, some little benefit 'might be expected; but, until these finishing operations, the strong 'cohesion of the clods would absolutely prevent the admission of air 'and moisture. These reflexions arose during last autumn, when I 'observed, even so late as the middle of August, many stiff land fallowed fields covered with immense clods, intermixed with thistles 'and other weeds. The only advantage derived from this sort of 'fallowing, appeared to consist in the destruction of the parent 'weeds, as many of them that had rooted in the clods would no 'doubt be destroyed by the heat and drought. At that time, the 'seeds of weeds which had come up in the interstices, exhibited a 'vigorous crop; but the greater proportion of them was still shut up 'in the clods, reserved to grow with the wheat, and to share with it 'all the advantages of the fallow.'

And, finally, it is not less necessary to pulverize the burnt clay than the soil itself, as is evident from the following passage; from which it also clearly appears, that this admirable manure puts an end to the useless distinction made by farmers and chemists, between vegetable and calcareous manures; for burnt clay not only contains within itself all that is valuable, both in dung and lime, but is greatly superior in its effects to either.

'At the time I was superintending the dressing of those experiments, the wind blew strong from the north, which caused the 'powdered dust of the calcined clay, when thrown out of the shovel, 'to pass beyond the southern boundary of the experiments, upon a 'space that was left unmanured. This circumstance attracted notice, and it was entered in my farm-journal. Soon after the crop 'came up, I observed a very visible improvement where the dust 'had fallen. This improvement gradually becoming more visible, 'reminded me of the effects I had read of gypsum. And I will venture to affirm, it was infinitely greater than could have been produced by an equal quantity of lime. This, indeed, was admitted 'by the most intelligent farmers who viewed it. The effect of the

'dust was decisively marked during the growth of three successive 'crops; so that, by this accidental circumstance, it is clearly ascer-'tained that calcined clay is a more permanent manure than rot 'dung; for, on the dunged part of this field, around the unmanured 'part of the experiments, the second crop was miserably poor, and 'the third much worse; whilst the four experiments dressed with 'calcined clay, at the rate of ten, twenty, thirty, and forty cart-loads '(or from one hundred and sixty to six hundred and forty bushels) 'per acre, even surpassed that superiority which they had shown 'during the first and second crops. This progressive improvement, 'after the soil might have been supposed to have been deteriorated 'by the two preceding crops, can only be attributed to the lumps of 'this valuable manure having been reduced to smaller particles, and, 'consequently, more intimately intermixed with the soil.'

We observed, at the outset, that there were several points in which this author agreed with Tull; and, among others, with regard to the comparative inutility of dung, and the superior advantages of pulverization. 'Upon the whole,' says the modern writer, 'I think it may be inferred, that pulverization by 'implements, produces effects equal, if not superior, to those of 'manure. Indeed, the above experiments seem to confirm the 'opinion of Jethro Tull, that it is even superior in its effects to 'common manure.'

The Fifth Chapter presents a 'Comparison of the Old and 'New Methods of Cultivation.' But, before coming to that ingenious view of the subject, we have some very candid remarks, which must be laid before our readers. From the latter part of the following quotation it will be seen, that the gallant General has to deal only with his stubble and its roots, and the *seeds* of weeds; and that no weeds, such as couch, dock, &c. propagate themselves by the root in the county of Sussex.

'My earnest desire is, that all and every part of the system may 'be submitted to the test of experiments. Let comparative trials be 'made of calcined clay against other manures; of fallowing against 'no fallows; and of the plough and harrow against the scarifiers: 'In short, let the facts I have adduced be opposed by facts, not by 'opinions or mere assertions, before any decision is passed upon a 'subject, which, I trust, I shall clearly demonstrate is likely to 'become of the highest importance to the agricultural interests of 'this country.

'A gentleman who manages his own farm, was some time ago 'conversing on the subject of fallows. I found him strongly addict-'ed to a rough cloddy surface, and to dunging his arable land. He 'had, however, made an attempt to get rid of fallows; but he said 'he was very glad to return to them—because he could never keep 'his lands clean without them.

'I assured him I had been more successful, but that my method 'differed essentially from his. I did not bury, as he did, the seeds 'of weeds that had fallen during the growth of the preceding crop. 'The surface soil was not turned over; it was merely broken, or 'shattered by implements, so as to loosen the stubble and roots of 'weeds; which were afterwards, with the seeds that had fallen, and 'a portion of the soil, collected by a rake and burnt, and the ashes 'spread. By these means, and introducing the row culture, my 'lands are now much cleaner, and yield better crops than they 'formerly did, after all the heavy expenses of lime and fallows.

'Those who plough deep, and bury the seeds of weeds by the 'first ploughing, are not aware, that by this outset of their fallow, 'they lay the foundation of a great deal of labour and mischief, 'and bring upon themselves the absolute necessity of a fallow, as 'the only means of eradicating the progeny of those seeds which 'they have inadvertently deposited deep in the soil. Now, if the 'whole of the stubble and its roots, with a small portion of the sur-'face soil, which *must* contain those seeds, be collected and destroy-'ed by fire, it is reasonable to suppose that lands might be as ef-'fectually cleared of weeds in this manner, as by a summer fallow: 'besides, they would have the benefit of a considerable portion of 'ashes. Perhaps this mode of burning might have a tendency to 'prevent the disorders of smut and blight; disorders with which 'my crops have not been in the smallest degree affected.'

The comparison itself cannot well be abridged. It is as follows, presenting the business of corn-farming in a very unfavourable point of view in the said county of Sussex.

'I will suppose two farms, the arable land of each consisting of 'one hundred acres; that they are both under a four-course rota-'tion, consequently divided into four equal portions; that the one 'is cultivated according to the old Sussex mode, and the other ac-'cording to that which I have adopted. Meadow and pasture lands 'are not included, because they are supposed to be the same on 'both farms; and the consideration of them is, therefore, not ne-'cessary for the present inquiry.

'For the same reasons, the interest on capital, and all the minu-'tiæ of contingencies, are excluded from the debit of the farms; 'nor is credit taken for the straw, which in both cases is supposed 'to cover the expenses of harvesting and thrashing the crops. The 'comparisons are merely confined to the expenses of cultivation, 'and to the annual value of the crops. The difference between 'those expenses and the value of the crops, shows the estimated 'profit, with sufficient accuracy, for exhibiting a general view of 'the two methods of cultivation.'

'*Abstract of the old Sussex Method.* No. I.

Crops.	Num. of Acres.	Expense of Cultivation per Acre.	Total expense of Cultivation of 25 Acres.	Annual Value of Crops of 25 Acres.	Difference, or Profit or Loss.
1. Fallow	25	—	—	—	—
2. Wheat	25	L.16	L.400	at 10*l.*–L.250	L.150 *
3. Oats	25	3 13 6	91 17 6	at 7*l.*— 175	83 2 6
4. Clover & Ray Grass	25	2 15 0	68 15 0	at 5*l.*— 125	56 5 0
	100	L.22 8 6	L.560 12 6	L.550	L.10 12 6

'Average value of produce L.5.5, or 5*l.* 10s. per acre.

'According to this very expensive method of cultivation, the tenant is generally a loser by his rotation crops. He could not pay the trifling rent of fifteen shillings per acre, and the poor rates and taxes, if it were not for the profit of his meadow and pasture lands —of the underwoods, hop-plantation, and dairy, and of his young stock; and by taking sixty or eighty sheep to pasture during the winter (from Romney Marsh and other places), for thirty-two weeks in the year, at six or seven shillings per head. The result of this view of the expenses and value of the crops, corresponds with what is stated in Doctor Worthington's "*Address to the Practical Farmers of Great Britain,*" published in 1810. He tells them, that "under certain unfortunate circumstances, you are "losers by your tillage land; and you only maintain your ground "by your dairy, sale of young cattle, colts, sheep, and other stock."

'*Abstract of the New Method.* No. II.

Crops.	Num. of Acres.	Expense of Cultivation per Acre.	Total Expense of Cultivation of 25 Acres.	Annual Value of Crops of 25 Acres.	Difference, or Profit.
1. Tares, Beans, Peas	25	L.5	L.125	at 8*l.*–L.200	L.75
2. Wheat	25	5	125	at 10*l.*— 250	125
3. Oats, Barley	25	3 13 6	91 17 6	at 7*l.*— 175	83 2 6
4. Clover and Ray Grass	25	2 15	68 15	at 5*l.*— 125	56 5 0
	100	L.16 8 6	L.410 12 6	L.750	L.339 7 6

'Average value of produce per acre, L.7.5, or 7*l.* 10s.

'Average profit per acre, 3*l.* 7s. 10½d.

'According to this new method, a tenant paying the low rent of

* 'Loss upon Wheat.'

'fifteen shillings per acre, and taxes, would gain 339*l.* 7s. 6d. upon 'his rotation crops of 100 acres,—besides having the same advan- 'tages from his meadows and pasture, underwoods, hop plantations, 'dairy, and young stock, and by pasturing the same number of 'sheep, as he who practises the old Sussex method.

'By this comparison it appears, that a farmer who cultivates ac- 'cording to the old method, loses 10*l.* 12s. 6d. by his arable lands; 'whereas, by the new method, he would be a gainer of 339*l.* 7s. 6d. 'upon 100 acres; or 3*l.* 7s. 10½d. per acre.

'This great difference in the results of the two methods, proceeds 'almost entirely from the heavy expenses of the fallow and lime: 'but as those expenses do not exclusively belong to the wheat crop, 'being incurred as *a preparation* also, for the succeeding crops of 'oats and clover, &c.—it is necessary to examine the general effect 'of those expenses upon the three crops, by taking a view of the 'charges and produce of each method—allowing one acre only to 'each division.

'*Cultivation of Four Acres, by the Old Method.*—No. III.

		Expenses of Cultivation.			Value of Produce.		
		L.	*s.*	*d.*	*L.*	*s.*	*d.*
Fallow, - -	1 acre	—			—		
Wheat, - -	1 ditto	16	0	0	10	0	0
Oats and Barley, -	1 ditto	3	13	6	7	0	0
Clover, &c. -	1 ditto	2	15	0	5	0	0
		22	8	6	22	0	0

'Here the expenses exceed the produce.

'Average value of produce per acre, L.5.5, or 5*l.* 10s.

'*New Method.*—No. IV.

		Expenses of Cultivation.			Value of Produce.		
		L.	*s.*	*d.*	*L.*	*s.*	*d.*
Tares, beans, peas, &c.	1 acre	5	0	0	8	0	0
Wheat, - -	1 ditto	5	0	0	10	0	0
Oats and barley -	1 ditto	3	13	6	7	0	0
Clover and ray grass,	1 ditto	2	15	0	5	0	0
		16	8	6	30	0	0

'By this method there is a profit of 13*l.* 11s. 6d. upon four acres, 'or 3*l.* 7s. 10½d. per acre. Average value of produce, L.7,5, or '7*l.* 10s. per acre.

'As it is thus clearly proved, that there is no profit by the old 'method, and a gain of 13*l.* 11s. 6d. by the new, upon the rotation 'crops of four acres, the conclusion that may be drawn from these 'premises is—that a farmer who adopts the new system, could afford to give his wheat, every year, gratuitously to the poor, and yet 'become a richer man than he who squanders his money and his labour in all the profusion and extravagance of the other.

'In the preceding abstracts, the charges of cultivation are rated 'nearly according to the details of the practical examples at the 'conclusion of the Third Section. I must however remark, that in 'the abstracts of the new method, those charges have been rather 'over-rated; consequently, the difference between the charges and 'the value of the produce, or the profit, is something less than it 'actually would be.

'The value of the crops being supposed the same in both methods, it is of little consequence whether they have been a little 'over or under-rated, as this would not materially affect the general 'result.

'By the comparison of the abstracts, No. 1. and 2, it is clearly 'shown, that the total improvement resulting *from the abolition of 'fallows—from the application of the cheapest of manure—and from 'diminishing the quantity of animal labour,* in the cultivation of one 'hundred acres, amounts to 350*l.* per annum, or to 3*l.* 10s. per acre. 'Consequently, those arable lands, which are now let in the vicinity 'of my residence at 15s. per acre, ought, *under a different management,* to yield a much higher rent, whilst the tenant might be left 'a larger profit, and at the same time be enabled to sell his produce 'at a cheaper rate.

'To what extent this economical system of cultivation could be 'carried, it is totally impossible to foresee; but, for the sake of 'argument, if we suppose the possibility of applying it to ten millions of acres of the arable lands throughout the kingdom, the effect of such a change would be, an accession of thirty-five millions 'Sterling annually, to the interests of agriculture, and of the community at large.'

We are now come to the 'Conclusion,' in the Sixth Chapter, in which many of the facts and arguments of the preceding chapters are restated, and some new matter added. Of this last description is the author's complaint of the wasteful practice of using straw as litter instead of food for cattle; and some very judicious remarks as to the share which the landlord should claim of the profits of the new system. If the rent be raised in proportion to these profits, as he observes, things will just be as bad for the farmer and the consumer as at present; but it seems to be his opinion, that landlords should be contented, at least for some years, with their present rents. We are also informed of his experience in cultivating wheat, year after year, on

the same land; and that the second year's crop was excellent. Having said so much of what this eminent agriculturist has done, it is but fair to close our extracts with some notice of what he is doing and intends to do.

'Hitherto, I have related merely what has been done. I shall 'now proceed to explain the arrangement, and the plan of cultiva- 'tion, I am carrying into effect, upon a farm, comprizing 112¾ 'acres of arable, 8 of hop plantation, 103¾ of meadow and pas- 'ture, and 74¾ of underwoods; in all—299¾ acres.

"The soil of this farm is in general stiff,—abounding with clay, "retentive of surface moisture; and, when dried by the summer "heat, it becomes as hard as a brick, consequently, impervious to "the plough, unless with a great power of animal exertion: and "more especially, as the practice is to plough deep." I have shown, 'however, in the 4th Section, that even this stubborn land yields to 'the irresistible force of perseverance: and that by repeating the 'operations of the scarifier, drawn by a single horse, a most perfect 'pulverization can be speedily obtained, at a very trifling expense.

'Lands of this description are generally supposed to be unfavour- 'able to turnips. Indeed, so far as I have hitherto tried, I have 'not been successful: and, for this reason, I prefer winter and 'summer tares, beans, peas, or potatoes, for the green crops: all 'of these succeed well, and can immediately precede the wheat 'crops; for which they have been found an excellent preparation.

'Either of these crops takes the place of the fallow, and is put 'in, at a small expense, *without ploughing* the clover ley, after it 'has been previously dressed with the calcined materials, and well 'pulverized by the scarifiers.

'These crops, therefore, commence the four year's rotation; and 'are succeeded by wheat, oats, and clover and ray grass, in the same 'manner as in the old Sussex husbandry.

'The fallows being abolished, my rotation becomes thus: 1. Tares, 'beans, peas, or potatoes. 2. Wheat. 3. Oats or barley. 4. Clo- 'ver and ray grass.

'The arable lands are divided, as nearly as possible, into four 'equal parts. I take no account of the hop plantations, meadow, 'and pasture, or of underwoods, because they are unconnected 'with the subject of this inquiry,—which is merely to ascertain, *by 'what means arable land can be made more productive and valuable, 'and the culture of wheat extended.*

'*Division of the Arable Lands*—1820.

'1. 28 acres of tares, beans, peas, and potatoes.
'2. 28 ditto of wheat.
'3. 28 ditto oats or barley.
'4. 28 ditto clover and ray grass.

'Total 112 acres.

'The clover and ray grass fields being excluded, there will remain,

'every year, 84 acres for the autumn and spring preparations. In 'order therefore to equalize the labour, during the autumn and 'spring, and to expedite the getting in of the winter crops, 42 acres 'are allotted for immediate preparation, after the clover and ray 'grass fields are cleared, and the wheat removed.

'The preparation generally commences with carting to the clover 'leys 280 loads of the clay ashes, for manuring 14 acres for winter 'tares. The ashes are spread; and, at convenient opportunities, 'the scarifiers are employed for obtaining a sufficient depth of tilth.

'But this, and every other work of the teams, must give place to 'the important object of burning the wheat stubble: because it is 'upon this operation that depends the removal of all obstruction to 'the roots of the succeeding crop, and by which the land is perfect-'ly cleared. If, therefore, the weather prove favourable, after har-'vest, all the scarifiers are immediately set to work on the 28 acres, 'for the purpose of loosening the stubble, and having it in readi-'ness for raking and burning; for, if there should be a wet season, 'so as to prevent the burning, there would be a considerable expense 'incurred, by removing the stubble to convenient situations for being 'burnt in the spring: and in this case, the stubble ashes must be 'used as a top-dressing to the oats or barley, if they cannot be ob-'tained before these crops are put in the ground.

'Supposing, then, the season favourable, the wheat stubble burnt, 'and their ashes spread soon after harvest,—the work of preparing 'the 28 acres of tare-stubble for wheat, by scarifying four or five 'times, and the completion of the 14 acres for tares, upon the clo-'ver ley, should be proceeded on without intermission; so that 'both these crops may be *drilled* as soon as possible.

'Having thus finished the winter drilling, the remaining 14 acres 'of clover ley can be dressed at leisure with clay ashes, and occa-'sionally scarified, so as to be ready for the reception of summer 'tares, or beans, peas, or potatoes, early in the spring. In the 'same manner (but without any further dressing than the wheat-'stubble ashes), the 28 acres that were in wheat, are gradually to 'be got in readiness for the spring crops of oats and barley and grass 'seeds.

'Particular attention should be paid to having proper drain-fur-'rows, in order that the lands intended for the spring crops may 'be kept as dry as possible during the winter months. The wheat 'crops are kept dry by the warp-furrows, which are parallel to each 'other, at the distance of $5\frac{1}{2}$ feet.'

There is an Appendix, which contains a full description of the ingenious implements employed in the new system, all of them of the author's own invention; but, without the plates, no description of them would be intelligible.

Having thus done our duty by General Beatson, in giving

to his book all the publicity in our power, we shall not detain the reader with many remarks of our own.

The object of the author, we take it, is twofold:—*First*, to reduce the expenses of cultivation, by substituting burnt clay for all other manures, and by the use of implements which clean and pulverize the soil in a shorter time, and at less expense, than the plough and the other implements now in use. Here, the superiority of the new system lies not in increasing the quantity of produce, but in diminishing the cost of production, or the natural price of corn, as Ricardo calls it; and this diminution is made out to be so great, as to amount to 3*l.* 10s. an acre over all the land cultivated for corn:—And, *second*, to increase the total produce of the country, by abolishing fallows. To effect this last object, it is only necessary to carry on a few loads of burnt clay, scarify as soon as possible after harvest, and rake together and burn the stubble, and spread the ashes, and then proceed with drilling the seed for next crop. Notwithstanding our less genial climate in the North, it is no great matter to pass a scarifier that goes over three acres a day, and is drawn by one horse, four or five times over the land, after harvest; and besides, much of our soil is certainly more tractable than the 'strong clayey lands' our author has to work upon, so strong as to require four horses to draw a furrow six inches deep. No plan was ever proposed, therefore, which it was easier to make a trial of, especially as all that is wanted is a square or two of 16½ feet for the experiment. But, as the General too truly observes, no such trials are to be expected from rent-paying farmers, men overrun with prejudice and conceit, and as invincible, by either observation or reasoning, as the soil they work upon. Yet, let not the gallant Veteran be discouraged; it is something, that he will gain a few hundreds by his own little farm; and it is something more, to have done his duty to his country by this excellent publication. We hope that he will live long enough to report his experience, after it is a few years older; and, in the mean time, we would beg him not to make any application to Government to put down fallows by law, lest he should hereafter come himself under the letter of the statute.

ART. II. *The Farmer and Land-Steward's Assistant; or, a Specimen of Farm Book-keeping; exhibiting, in a concise and simple Form, the Transactions in the Arable, Grazing, and Woodland Departments; a General Account of Cash, and an Account of Charge and Discharge upon each Department.*

The whole selected from the Books of real business which have for many years been kept in the same form by the Author By JOHN MATHER, Castle-Hill, Carse of Gowrie. Dundee, 1819.

IT is about eight years since we endeavoured to draw the attention of our readers to the importance of a simple and correct System of Book-keeping, adapted to the use of Farmers; with what success, we have no means of knowing. Since that time, and indeed before, there has been no want of *Forms*, published under the name of Farmers' Account Books, sufficiently minute perhaps, but probably too complicated, as well as expensive, for general use, and which have been therefore chiefly confined, we suspect, to gentlemen's stewards and bailiffs, with whom it is a matter of necessity to exhibit a view of their proceedings to their employers. The results afforded by these methods of book-keeping, are also, generally speaking, confined to an account of outlays and receipts, and do not present a satisfactory solution of several questions which it is of importance to a farmer, upon an extensive scale of business, to see clearly stated and correctly resolved. All that seems to be thought necessary is, an account of the cash received and paid away, and of the debts and credits of the concern; so that the balance between these men and their employers may be ascertained periodically: And this purpose is usually obtained by a sort of empirical method of entering the particular sums, without such classification or arrangement as would be required to show the profit or loss on each department, and on every article of each department. Even where a subdivision of the accounts is made, as into Corn-lands, Grazing-lands, the Dairy, &c. the transactions under each of these heads are commonly all brought together, without any discrimination to show from what particular fields, or species of grain, or descriptions of live stock, the profit or loss on each department arises: and still less can it be known from these accounts, what particular rotation of crops is the most advantageous; whether it is most profitable to breed, rear, and fatten stock, or to carry on only one or two of these branches:—besides several other matters, upon which the success of a farmer materially depends.

Nothing can show more clearly the imperfect manner in which farm accounts are generally kept, than the offer lately made by the Board of Agriculture of a considerable premium to the person who should lay before them a correct method of keeping accounts, taken from real business; a premium which, as far as we know, has not yet been awarded, or perhaps not even

claimed. We will venture to say, that there is not one farmer among a hundred, even confining the number to such of the class as have had the benefit of a good education, who can show, from their books, what is the expense of raising an acre or a quarter of wheat and other kinds of grain on their farms; or the prime cost of a stone of beef or mutton; or what any particular field has paid them for a series of years, under a variety of crops.

It would be still more hopeless to expect, that the returns from capital laid out, not in such a way as to be returned with its profits within the year, but in the more durable improvement of the soil itself, should be exhibited in their books. And yet few things certainly can be of more importance to a farmer, than to ascertain whether a sum so expended, a thousand pounds, for instance, on lime, drainage, &c., has increased the produce of the land so much, as to replace that sum, with a profit, before the end of his lease.

It is not to be denied, however, that it is a much more difficult matter to attain anything like accuracy in these and other points, than in the transactions of a merchant. One reason—perhaps the principal reason—seems to be, that a farmer unites in himself two different characters; he not only buys and sells like the merchant, but is at the same time a producer or manufacturer; and, from the very nature of his business, it becomes difficult, perhaps impossible, to separate the transactions which properly belong to each of these characters: and, besides this, much of his produce, which he consumes on his farm, has no uniform marketable value, and if entered like a merchant's account, under the heads of Dr. and Cr., must have a value set on it somewhat arbitrarily. This value, too, ought to be higher or lower, not merely according to the quantity and quality of the produce, but also according to its comparative scarcity or abundance in different seasons. Owing to a difference in the seasons, also, the prime cost of articles which have an ascertained marketable value, such as wheat and other kinds of corn, will vary considerably; the quantity may be less, while the expense of obtaining it is the same; or the expense may be increased, by wet and otherwise unfavourable seasons, while the quantity is the same.

It may be useful at any rate, though not always worth the labour of reducing to practice, to keep in view such questions as we have adverted to. Upon a large scale of farming, under a lease of twenty years or more, the necessary labour, we think, would be exceedingly well bestowed. The accounts that it might be necessary to keep with this view, would perhaps be

advantageously classed into Two Parts; of which the first would contain all that is now commonly exhibited in farm-accounts, and the second those subsidiary and less perfect entries which seem required to give a farmer a correct view of his concerns. We would by no means recommend, that sums estimated somewhat arbitrarily, for straw, dung, &c. or generally all the articles of home growth consumed on the farm, should be mixed with actual payments or receipts. Such an intermixture could not fail to lead to some degree of confusion or uncertainty as to the amount of the real profit or loss on the whole concern. To separate them would also have this advantage, that if it was found inconvenient to proceed with the latter description of accounts, they might be given up, without occasioning any alteration in the certainly more important record exhibited under Part First.

According to this method, we would have a Day-book and a Ledger, under Part first, from which should be seen the daily operations on the farm, and the transactions connected with it; with inventories of stock, crop, and implements, once a year or oftener. In the ledger there might, as in a merchant's, be both real and personal accounts. Under Corn, for example, there would be placed, on the Debit side, the seed, labour, and, generally, the whole expenditure incurred in raising it, including the interest of capital; and, on the Credit side, the quantity of the produce and its value, whether used for seed, paid to servants, consumed in the family, or employed in feeding horses and other kinds of live stock, as well as what was actually sold. The balance on this account would thus show the profit or loss on corn—or at least on the tillage lands generally; as, if it was found inconvenient to separate the labour and other expenses of corn from those incurred for turnips, potatoes, and other green or fallow crops, the value of these crops would have to be placed, on the Credit side, along with that of the corn. In case of turnips or other crops consumed by the farmer's own stock, the value might be somewhat arbitrary; and they should therefore be placed by themselves, or the estimated price might stand in an inner column. By similar accounts, the profit or loss on live stock, generally, might easily be ascertained; and it is scarcely necessary to mention, that the personal accounts should exhibit a correct view of the debit and credit of every one with whom the farmer has any dealings, even with his day-labourers.

In this general view of his affairs, any sum that might be expended on the improvement of his farm might be converted into an annuity of such an amount as would suffice to replace that

sum, with its profits, before the end of the lease; and such annuity would fall to be added to the rent. Strictly speaking, the price of horses and implements, which require to be replaced in a few years, should also be converted into an annuity; but except that of a thrashing machine, an article of considerable value, perhaps such a degree of accuracy is not very easily attained, and hardly worth the trouble of attempting; as the inventories taken at different periods may show the decrease in the value of the horses and implements, or what is lost by their tear and wear, better than a previous estimate, founded on their probable duration; and this decrease, if thought necessary, may be added periodically to the general debit of the farm.

From this Part First, it would be easy to form an annual abstract, which should show, in a few lines, the profit or loss on that portion of a farm which is kept in tillage, and the expense and produce per acre; and also the profit or loss on live stock, or rather the difference between the price at which they were bought, and at which they were sold. To make out the *real* profit or loss under this department, the extent and quality of their pastures, and the quantity of the other kinds of food consumed by them, and the expense incurred for them in labour, &c. would have to be taken into account. The difference between the sums at their account in the ledger, or between what they were bought for and what they sold for, would be the sum received for keeping them, or for the pastures and other food they consumed, and the expense of feeding them; and it would be easy, on comparing the acreable profit of those pastures, &c. with that of the corn lands, to ascertain generally whether tillage or grazing was the more profitable employment of the land. This could not, however, be ascertained with all the certainty that might be wished; because, though the pastures might appear to pay less than the corn land, yet in that state they might actually be kept for a time with greater advantage than in corn, inasmuch as the soil might be improving in its future productiveness when brought into tillage. Whether the stock was bought, as we have here supposed, or bred upon the farm, would not make any difference; though, in the latter case, we would have the estimated price of them, as has been already observed with regard to turnips, &c. kept separate from the other money columns.

But whether it might be thought expedient or not to separate the tillage and pasture lands, or the crops produced annually, from those that continue in the ground for several years, such as cultivated or natural herbage, there can be but one opinion as to the expediency of ascertaining, with perfect accuracy, the

outlays and receipts, the debits and credits, and, by means of inventories, the stock, crop and implements on hand at different periods, at least once a year; and from these to exhibit a pretty exact, though a general view, of the profit or loss of the whole concern. This is nearly all that Mr Mather proposes to do, as we shall see immediately; and his method is so easy, that any one moderately skilled in common arithmetic can find no difficulty in adopting it.

As to what we would call Part Second, we have hardly room to say a few words. The object of it would be, to furnish answers to the following questions.

1. What crop—wheat, barley, &c. do you find most profitable on your particular farm?

2. What rotation of crops—alternate white and green crops, or two or more years pasturage of the land sown to grass before being ploughed;—or, in the case of clay soils, whether a course of four years, or of six years, &c.?

3. Whether your corn land, or the land employed in feeding live stock, yields the greatest profit; and what kinds and subspecies or varieties of live stock, pay best for the food they consume?

4. What is the expense and produce, and the profit or loss, on the different fields or soils of your farm?

These questions, and others to which they lead, are evidently important; nor does it appear difficult to frame a series of accounts in such a manner as to give the answers sufficiently near the truth for every useful purpose. A Day-book, such as ought to be kept at any rate, if sufficiently comprehensive and also minute in its details, would afford the materials wanted; along with a Field-book, in which every field should have a separate portion allotted to it; and appear as Debtor for the seed, labour, and other expense incurred on it; and Creditor for the produce it yields, whether it be an annual crop or pasture. In the latter case, the time for which a specified number of sheep or cattle were kept on it, must be entered in the first place; and the general profits of the stock, ascertained afterwards, would fall to be divided between this and any other fields of which that stock consumed the produce.

But it is our purpose at present to make Mr Mather's method of Book-keeping known to our readers.

The first is the *Day-Book*, which begins with an Inventory and Valuation of Stock under the following divisions.—1. Furniture, &c. or Implements. 2. Grain; Potatoes and Yams, and Hay and Oatmeal. 3. Live Stock, Horses, Milch-Cows and other Cattle, Swine and Sheep. And, lastly, Unthrashed Corns,

to which the quantity or value is not affixed. This book is not, however, confined to the arable farm, but contains the transactions under the three different departments to be afterwards mentioned. After this, the entries are made in the usual way, according to the date of the transactions. With a view to the purpose we have adverted to, these entries are not sufficiently minute; the Day-book contains no record of the labour performed; the thrashing and sales of grain are entered, without mentioning the fields on which it grew; &c. Besides this, we should have thought it of some importance to have prefixed, along with the Inventory, a short view of the farm, mentioning the state of every field, or what was its last crop, and what was to be its next; but instead of this, we do not know even the extent of it. The book begins with the 22d November; and if any wheat was sown at that time, the seed and labour, and, if after fallow, the preceding year's rent of the land, should have appeared in the Inventory itself.

The next is the *Cash-Book*, which also embraces all the three departments, and contains the sums received and paid, according to their dates, but without reference to either the Day-book or Ledger. Many of the sums on the credit side, including all those paid for labour, tradesmen's accounts, &c. have not been previously entered in the Day-book; and here, as in the Day-book itself, the sums received for corn and other produce are entered generally, or without any notice of the fields from which they were obtained.

In the *Ledger*, which is the next in order, the first account is, 'Farm Furniture and Labouring Utensils;' on the Debit side of which, under the date of 22d November, 1816, stand the articles and their value, as prefixed to the Day-book; and on the Credit side, under the date of 22d November, 1817, the same articles, and their value at this last period, and the two sides, are balanced by a sum to cover the decrease of their value during the year. The Horses' account is balanced by a similar loss, and the Cattle and Swine accounts by a profit. On the Debit side of the Butter is the quantity churned at different times, and on the credit the quantity sold; of which, and of its price, a particular account is subjoined, and also of butter salted and of cheese sold. This last, by the by, as well as some other accounts, has no corresponding entry on the Debit side; and in regard to both the Butter and Cheese accounts, and also Milk sold, if there was any, we think it would have been quite as methodical to have placed them under the head of the Cows; or, at least, the cows from which these articles were obtained, should have been particularly mentioned, and the quantity of milk they yielded.

Mr Mather seems to consider these accounts as forming a separate branch or division of the Ledger; for, after a blank page, he returns to the Inventory for the corn, &c. thrashed and unthrashed in November 1816, adding the unthrashed corn in November 1817; and then the regular Ledger accounts are resumed, beginning with Wheat, and following with the other kinds of Corn, Potatoes, Grass-seeds, Lime, Tares, Hay, &c. It seems a strange oversight that Potatoes are not credited with any sold; though there is a separate account of Potatoes sold to a considerable amount. Of the Sheep on the farm, as shown in the Inventory in November 1816, and of their Wool, there is no entry whatever in this part of the Ledger; though a separate account is found for this stock after one which bears the title of

'*An* ACCOUNT *of* CHARGE *and* DISCHARGE,'

which contains the receipts and outlays on account of the Arable Farm alone; the same, so far as they go, with the Cash-book. But here these articles are arranged under separate heads; and this branch is closed with a Profit and Loss account; of some of the articles on both sides of which, we can make nothing. They do not appear to agree with the balances in the Ledger; and, like the rest of this account of Charge and Discharge, it contains no reference to either the Day-book, Cash-book, or Ledger.

We have already noticed the Sheep account, which, with Black Cattle, and Pastures let, form a separate branch under the head of Pastures; all the preceding accounts in the Ledger belonging to the arable farm exclusively. The Sheep accounts seem to be stated with much neatness and accuracy, showing the number of every description of that stock. And this is followed by an Account of Charge and Discharge for this Pasture department, similar to that already noticed, which is subjoined to the arable farm; but without any Profit and Loss account.

The Woods, Plantations, &c. form a third department; of which the first account shows, on the one side, the account of Sales; and on the other, the Cash received; the Outlays appearing only in the Charge and Discharge Account; which completes this like the two former departments.

A general account of Charge and Discharge for all these three departments, under the several heads of '*Farm*, *Pastures* and *Park*, and *Plantations* and *Estate*,' is subjoined, and may be said to complete the series of accounts. All the sums that appear in the Cash-book are here brought together. But, as we have already noticed, in the case of the Pasture department, there is still no Profit and Loss account either for that or the Plantations.

The work concludes with a 'Time-Book,' exhibiting a form

for entering the employment of the yearly servants and day-labourers, and their rate of wages; and a 'Weekly Report,' containing a similar form; and one for entering 'Sundry Occurrences.' Both these forms are too limited for being useful, as they do not seem well calculated for showing the kind of labour performed, nor the fields on which it is performed.

It will be seen from our preceding remarks, and the incidental notices given in the course of this slight examination, that we by no means think this a perfect system. We might object to the valuation of the Live and Dead stock; not because it is inaccurate, but because it is necessarily in some degree arbitrary; and therefore, the sums should not have been blended with real payments and receipts, but kept always separate;—to the want of a distinct view of the extent of the concern, and the mode of cropping the arable farm,—of references from each of the books to the others,—and, above all, of an accurate Profit and Loss account under each department. It would have been also satisfactory to have had a view of the capital employed, upon the arable farm at least, with some notice of the rent that might be got for it from a tenant: But, at any rate, not to ask too much, we should certainly have seen the extent of land under the several crops, and their produce per acre, and also the expense of obtaining it. This produce and expense cannot be known from the Charge and Discharge account, which is confined merely to the cash received and paid, and does not show the full wages of the labourers—oatmeal, &c.—nor the value of the corn and other food given to the horses—nor even that of the seed when it is the produce of the farm itself. Notwithstanding all this, however, we sincerely agree with the author, that his work 'may be useful to a very numerous and meritorious class of his countrymen;' and, as such, we earnestly recommend it to their attentive perusal.

BRANCH III.

Agricultural Intelligence.

The labours of the field, during the last three months, have proceeded with very little interruption, the season being for the most part mild and dry: and the frosts, in the early part of winter, having rendered even the stiff soils friable, the sowing of the spring corns was performed with facility, and the seeds well covered with a fine mould. Since the last week of April, the weather has been cold, and given some check to vegetation; yet, with the exception of part of the autumn-sown wheat, of which the Report is in some instances unfavourable, the young plants, though not so forward as last season, are still healthy and promising. The Lambing season has passed over with perhaps less than the average rate of loss, and the Sheep on the high grounds are in good condition. On arable farms, the Ewes have been more scantily supplied with turnips than usual, that root having suffered more by the frost than we were led to expect at the date of our last Publication.

The Corn Markets of England have improved about 10 per cent. for Wheat, Barley and Oats, since the beginning of seed time, and those of Scotland somewhat more. The average price of Wheat in Scotland, according to the returns for the four weeks preceding the 15th April, is only 3s. 7d. a quarter lower than that of English Wheat, whereas the difference is commonly 8s. or 10s. Notwithstanding the comparative lowness of price, it does not appear that there is less grain in the hands of farmers than in other seasons at the same period. It is difficult to account for the state of the markets for the last twelve months, unless we have recourse to the supposition, perhaps but too well founded, that the consumption has greatly diminished; for it is idle to allege that it has been owing to the importation of Foreign Corn. No Wheat has been imported for home consumption since February 1819; nor Rye and Beans since May; nor Barley, Oats and Peas since August; and it has been asserted by well-informed corn dealers, that when the Ports were shut at these periods respectively, the stock of foreign grain was not considerable. The supply has therefore been furnished, with little exception, from our own growth. Such a fact deserves the serious consideration of those who look to the proposed alteration of the Corn-laws for a considerable advance of prices. As the average of the maritime districts is still below 70s. for Wheat, and proportionally low for other grains, there is little reason to expect that the Ports will be opened in August, unless there be a prospect of a late or scanty crop.

Fat Stock has paid little for winter feeding; yet Cattle of all ages are in demand, and Sheep also bring good prices. Grazing Lands have let for the season at much about the same rents as last year. Wool, it is suspected, will be lower.—*6th May.*

SCOTLAND.

Aberdeenshire Quarterly Report.

THE present season has proved propitious for all kinds of agricultural operations; and the seed has been put into the ground with every possible advantage. Oat-sowing commenced about the 12th of March, and was finished by the 8th of April; except on trifling patches, from which the Turnips had not been drawn. Very little Bear has been sown, the absurd regulations of Government having rendered this species of grain totally unsaleable. The cultivation has been already, in a great measure, suspended, to the serious injury of the agriculture of the county; but, to the great benefit of the smuggler, who, as there is no other competitor, gets the raw material for a mere trifle, and having *no other merchant*, the farmer is often induced to run the desperate risk of giving him credit, in order that he may have a *chance* of making something of his Bear, should his friend, the smuggler, be fortunate enough to elude the vigilance of the Excise. Last year, there was upwards of 20,000 bolls of Bear exported from this coast:—this year there is not yet 1000; and, when no market can be had abroad, it *must be looked* for at home. Fine Highland Whisky is selling at 7s. and 8s. per gallon; and, if the farmer has no other advantage, he can *drown his care* for little money!

Wheat has been, in some instances, thinned, by the severity of the winter; but is, on the whole, looking well. The braird has come up equal, and thick; and the weather having been very warm from the 16th to the 25th of this month, it is unusually far advanced; and, should the weather prove tolerably propitious through the summer months, we shall have an early and abundant crop.

Potatoes are mostly planted, in excellent season, and with the land unusually well cleaned.

Corn-markets have been looking up. Potatoe-oats are selling at 17s. 6d. to 20s.; Feed, at 16s. to 17s. 6d. per boll of 6¼ bushels; Wheat, at 30s. to 35s., per Linlithgow boll; Oatmeal, at 14s. to 16s., per 140 lib.; Malting-Barley, at 20s. to 23s.; Bear, at 15s. to 18s., per 6¾ bushels.

The few Grass Parks which have yet been let, have not varied in rent. Cattle have been sold at high prices, but have left little for wintering, owing to the extravagant prices at which they were laid in.—As high as 18*l.* 10s. have been paid for a lot of 50, 3 and 4-year olds; and several smaller lots have been sold equally high for the road. For the Flesh-market, 3*l.* to 3*l.* 5s. per cwt. can still be obtained for *good fat*.

A wet fall and stormy winter is always hard for Sheep; and great complaints exist of loss of Lambs, from the weakness and want of milk of their mothers.

Labour continues in demand, and wages rather looking up.—*29th April.*

Ayrshire Quarterly Report.

THE month of February was the best weather I think I have seen, and, at times, very warm for that season of the year; and the ploughing upon dry, or ley ground, was in great forwardness. The first and second of March, we had a general fall of snow (it fell lightly), and a keen frost for eight or ten days; but, as it went off without any rain, it saved the Wheat much, and left the ground in order for the harrowing. Sowing began on the 14th, on the higher parts of the county, where the land was dry, and a good deal of seed was put into the ground in a few days; but sowing does not commence in the lower parts, in general, till after the 20th; and the weather broke on the 21st, and continued very inconstant till after the first ten days of April. The low grounds and strong clays were very much drenched, and no out-door work of any kind almost was got done. The weather soon after cleared up; and, since, we have had the best weather for finishing the labours of the field I have ever seen. We had no appearance of spring till the first of April; and, even then, it made very little progress till the 17th, when a very rapid vegetation began. In two or three days the fields had a beautiful appearance; the early sown Oats brairded, and seem to be very well planted. Wheat, and the artificial Grasses, are looking well, (except upon low wet clays), and promise a good crop; but are, at least, about three weeks later than last year. The sowing is now almost finished, except that of the Bear, of which there is not much sown in this county. The planting of Potatoes is going rapidly on, the ground in fine order for receiving that kind of crop; and, if the weather continues good, in a few days it will be finished. There has seldom been a better Lambing time than this—the Ewes were in fine order; so that the storemaster will have a full crop of them, and the markets be well supplied: But Sheep, and Stock of every kind. have much fallen in price from last year; and a demand for the dairy breed is not much to be looked for, as that sort of farm produce is much reduced in value. There is no complaint of scarcity of fodder; and if the weather become warm (though it has been very cold these three days, with the wind from the east), the cattle will be turned out to a full bite. Grass Parks are, this year, considerably lower than last year. A great many of the farmers, who had engaged in the Yeomanry, were put to much inconveniency, by being called out on permanent duty on the first of April. To their credit, they obeyed with the greatest alacrity and good-will; marched to wherever they were ordered; to Glasgow, Paisley, Kilmarnock, &c., or wherever those misguided men, who had assumed the name of Radical Reformers, were likely to meet. All is now quiet, and I trust will continue so; but they have greatly hurt themselves, and the country at large. I hope they have now a sight of their folly.

Wheat and Oatmeal have both advanced a little this quarter. Wheat is now selling from 32s. to 33s. per boll, and Oatmeal retailing at 2s. 10d. per stone, Dutch; Beef from 5d. to 10d.; Mutton

from 8d. to 10d.; Veal, 3d. to 9d.; Butter from 1s. to 1s. 4d., all per lib. of 24 ounces. Potatoes 1s. per peck; the Quartern Loaf, 11d.; full Milk Cheese, 10d. per stone of 24 ounces to the lib.—— *April 28th.*

Banffshire Quarterly Report.

SINCE the commencement of this quarter, farm labour of every description has been carried on with considerable despatch, and, upon the whole, not unseasonably performed. Soon after the snow went off, towards the end of February, some successful attempts were made in getting Wheat sown, which now looks healthy, and may succeed very well, if the summer prove favourable. The Oat seed commenced about the 12th and 15th of March; and went on very seasonably until about the 25th of the month, that we experienced some heavy falls of rain, (and at one time the ground was completely covered with snow), which occasioned a good deal of interruption to the work; and in wet situations, the land continued long in a very raw state for harrowing: the Oats are, however, generally above ground, and the *braird* seems healthy and vigorous. The weather has been dry, and rather warmer for about a week past; and the Barley seed will soon be put into the ground in excellent condition. Hitherto the weather has been cold, with frequent frosts during the night; so that vegetation is only beginning to come forward. Provender has been plentiful, and the interval betwixt Turnips and Grass will not be much felt. A good many lots of Wintering cattle are already sold at about 9s. per stone Dutch, sinking offal; and as there are plenty of merchants appearing, there is a prospect of ready sale for all those in condition for the market: But from the very high prices Stock was laid in at during last summer, profits for wintering are but trifling. However, those that rear the cattle have seldom been better paid. Young stock seem not to be very plentiful, and are remarkably high-priced—even dearer, in proportion, than cattle fit for the road. The demand for grain has been much brisker, particularly for Oats, during this quarter. Potatoe-oats, of middling quality, bring 18s. per boll (nearly 6½ bushels); Common ditto, 16s. to 17s. same measure; Meal, wholesale, about 16s. per boll of 8 stones Dutch. Barley is so little in demand that prices cannot be quoted. Butcher meat, retail prices, 7d. and 7½d. per lib. Dutch. From the roads and other public works going on, Labourers of all descriptions are likely to be employed.——*25th April.*

Dumfriesshire Quarterly Report.

THE sowing of Spring Corn has now for some time been finished; and that important part of the business of the farmer has, upon the whole, been performed under circumstances not unfavourable. About the 18th March, land became fit for the operation of the harrows, and a considerable quantity of Oats was then sown; but, on the night of the 22d, the weather set in rainy, and continued so until the beginning of April, when it rather improved; and on dry soils the harrows were again at work. It was not, however, till the 9th

of this last month, that any thing like settled weather commenced, or that the ground got into condition perfectly suitable for the reception of the seed. Since then, it has kept steadily dry; and, what is rare at this time of the year, it has also been mild and temperate. Sowing, generally speaking, was concluded between the 12th and 15th; and although this is a later period than is usual or desirable, a genial atmosphere has produced so good an effect, that the braird is as well up, and looks more thickly planted, and stronger in the blade, than is common at this date. It may be mentioned, that on Saturday last, the thermometer stood at 74 degrees, in a situation not exposed to the rays of the sun—evincing a temperature very probably not often equalled in the experience of the present generation on the 22d April.

Planting Potatoes is just now the order of the day; and, for this process, the dryness of the weather is peculiarly favourable.

Pasture fields are in about the ordinary state of forwardness, neither remarkable for verdure or scantiness of growth: probably there is too little moisture for grass, which requires more than any other plant.

The Autumn-sown Wheat, in consequence of the severity of the winter, is in rather a backward state; but it is now making rapid advances, and, provided the summer is not a late one, no unfavourable augury needs be drawn from its appearance.

The stock of Corn at present in the hands of farmers, is probably fully an average one; and more Fodder than usual will stand over for the consumption of next winter.

Turnips never sustained so complete a demolition as they did by the severe frost of December and January last. The previous unfavourable state of the weather had prevented the usual quantity from being stored up; and all left in the fields, both White and Yellow, were, at the breaking up of the frost in the end of January, in a state completely useless for any other purpose than manuring the ground on which they grew. Ruta baga too, that useful and hardiest of all edible roots (which is not cultivated to half the extent it deserves), was in several situations much injured.

During the early part of the spring, unfed Sheep and Cattle brought good prices for the English market; and great numbers of them were sold. They did not, however, leave what is called good payment for their winter food: Nor did any reasonable person expect that they would do so, from the extravagantly high prices of last autumn. Of late, the demand has slackened, and prices threaten an abatement: And when the state of the market for animals of all sorts, fatted, and indeed for every kind of provision, is considered, it is not easy to see how the value of Lean Stock can continue at its present rate.

Pork was in little request, and at a low price, through the whole of the last curing season.

The present state of agricultural affairs is in short extremely unfavourable, and not a little alarming to those engaged in them. Low prices for all our saleable articles, coupled, unfortunately for both

landlord and tenant, with high rents and expenses, stare us in the face. For these things some remedy must be devised; but what that remedy is to be, puzzles all. One thing must be admitted, that it is incomparably easier to find fault with, and cry down plans framed by others for national improvement, than to suggest expedients in their stead better suited to the object in view.

We have heard, and do still hear, too much of these idle, ignorant, and misguided men, called Radicals; but are in hopes that an immediate stop will now be put to their mischievous machinations. Happily, we see none of them in this part of the kingdom; at least if there are such, their voices are too feeble to disturb the public ear.

Day-labourers have been pretty well employed this season, but their earnings still supply them sparingly enough with the necessaries of life. Hired Farm-servants are, and have always been, much better situated; their wages have not declined this spring. Able Ploughmen have from 5*l.* to 6*l.* 10s.; and Women from 3*l.* to 4*l.* for the half year.

Prices of Corn—Wheat, 8s. to 8s. 6d.; Barley, 3s. 4d. to 3s. 8d.; Potato-Oats, 3s. to 3s. 2d. per Winchester bushel. Oatmeal sells at 2s. 6d. per stone of 17½ lib.; and Beef and Mutton from 5d. to 6d. per lib. Pork, last season, may have averaged 5s. 9d. per stone of 14 lib.—26*th April.*

Fife Quarterly Report.

The present spring has been as favourable for all agricultural operations as the farmer could possibly desire. The Oat seed is about finished, and the plants spring thick and beautiful. Wheat appears also remarkably good. The ground intended for Barley is prepared in very favourable circumstances; some is already sown, and a good deal far advanced in preparation. The season has not been propitious to the Turnip crop, as almost whole fields were rotted by the alternate changes from frost to fresh weather, by which the farmer was deprived of the expected supply to his stall-fed cattle, and compelled to dispose of them only half fat; and this has very generally happened over the whole county, by which a serious loss is sustained.

Peas and Beans could not this season be sown so early as the last; but sowing was at last accomplished in favourable circumstances. The new Clovers have a very favourable appearance; but the Pasture Grass is only beginning to spring since the few days we have just had of warm weather, without hoar-frost in the morning. Flax seed is now sowing in considerable quantities on ground in excellent order for its reception.

Of Potatoes, a large quantity will be again planted. The last crop was a good one; none are injured by frost; and almost none could be sold, from the low price of Oatmeal, until very lately a demand for export to England has given a ready market at 8s. per standard boll of 4 cwt.; this, with the quantity wanted for seed, will at last exhaust the stock on hand. Large quantities of this crop

were consumed by Cattle and Horses, as, till very lately, even 5s. or 6s. per boll could not be obtained. The present demand is most fortunate, as the farmer is encouraged thereby to plant more largely than he would have done, had no purchasers appeared to clear away the stock on hand. Crop 1819 has turned out a productive one. The Grain Market has been very fully supplied; indeed it may be said, for the last three months, it has been glutted; and, in consequence, prices continue to fall from the corresponding dates at this time twelvemonth, with the exception of Wheat, which has kept pretty steady. Oats being then 23s., fell to 17s.; Meal, then 24s. 6d. fell to 16s. 6d.; Barley, then 36s., fell to 18s. and 20s. per boll. Peas and Beans, then 24s., fell to 15s. That the supply greatly exceeded the demand, is quite evident, not only from the fall of price, but from the large quantities of unthrashed grain still remaining in the stackyards. And though the demand has revived a little during the last two or three weeks, the prices have not, at an average, exceeded those quoted in the last Quarterly Report, and are not such as to encourage the farmer to raise grain: And yet, during that whole period, immense quantities of foreign grain continued to be imported, at a time when the home produce could not find a market: The wisdom of the measure may therefore be very justly doubted.

All labourers are in full employment; nor are any manufacturers unemployed, if willing to work; and no complaint is heard, excepting that they work for less wages than formerly.

The rent of Grass enclosures is varied almost nothing from the rates of last year; some a little lower, and others higher, but the average the same.—*25th April.*

Forfarshire Quarterly Report.

THE weather has been as propitious as could be wished; and the Seed has been inserted, and Potatoes planted, in the most favourable circumstances. The Oats and Barley, in most cases, are covering the ground; while the Wheat and sown Grasses, having been protected by snow during the severity of winter, appear very healthy and vigorous. On Wednesday last, the 26th current, a boisterous wind from NE., with frequent showers of snow or sleet, blackened the leaves of the Wheat and sown Grasses which were most exposed to its fury, and changed some parts of the young Oats and Barley, from a lively green to a sickly yellow. In gardens it also blackened some of the leaves, and destroyed some of the flowers, of the fruit-trees and berry-bushes. The wind has changed to W. by N., and still continues strong and dry. Some progress has been made in preparing the naked fallows, and in performing the first operations on the land intended for Turnips. Vegetation was much checked by the cold wind on Wednesday last; and the young crops stand much in need of a warm shower. During the severity of winter, many flocks of Sheep were driven down from the Grampians to the sea-shores in quest of food, as the upland pastures were locked up

in ice and snow. We understand, however, that the lambing season has proved highly favourable, and that the loss has been much less than is often experienced after more open winters.

The prices of Live Stock, although they have somewhat declined, have held out much better than was expected. The fiars prices, as struck by the Sheriff of the county, with the assistance of a Jury, at last Candlemas, here follow.—Wheat, 1*l.* 10s. 3d.; Barley, 19s. 10d.; Bear, 17s. 3d.; Peas and Beans, 16s. 8d.; Potato Oats, 17s. 6d.; Common ditto, 16s. 5d.; Oatmeal, 15s. 10d.

Since the fiars were struck, there has been a slight rise in the prices. The medium price of Wheat is now 36s.; Barley, 23s.; Bear, 16s.; Oats, 19s.; Peas and Beans, 17s. 6d.; Oatmeal, per boll 8 stone Amsterdam, 17s. 3d. If the prices should ever rise to the opening rates of foreign corn, it is understood that there is an immense magazine of that article ready to be poured into the market, which will soon reduce the prices to the lowest rate, or even lower than foreign corn can be imported with profit. Thus our own cultivators are not likely to derive any benefit from the rise of the market, and must soon drop all competition with the speculators in foreign corn. The mercantile and manufacturing interests have procured a complete exclusive monopoly of their colonial produce and manufactured goods, against the cultivators of our soil; and, if they will insist upon purchasing their corn from foreign nations, they ought, in justice, to allow our cultivators to supply themselves with colonial produce and manufactured articles from the same quarter. This they ought to do; or consent to some equivalent which may put both parties on an equal footing.—29*th April.*

Letter from Glasgow, 29th April.

The weather of February and March was, upon the whole, uncommonly favourable to agricultural operations; insomuch, that by the termination of the latter month, the whole of the Oats and Beans intended for seed were committed to the ground. Nor is the weather at present less propitious to the sowing of Barley and the planting of Potatoes, which are the departments of husbandry in which the farmers of this neighbourhood are now principally occupied.

Of the young Wheats, those which were sown late on Potatoe-land, appear thin on the ground; but those which were sown at an earlier period, or on ground which had been summer-fallowed, exhibit such a vigorous and healthy appearance, as gives us reason to anticipate both an early and abundant crop.

The favourable state of the weather during seed-time, has had the effect of keeping our markets moderately low. A few weeks ago there was some appearance of an advance in prices; but the continuation of fine weather has caused them again to decline.

Our importations of Oats from Ireland are more than adequate to the consumpt. We are fully supplied in British Wheat from our own neighbourhood, and the north and east coasts of Scotland. There is still on hand a great abundance of foreign Wheat clear of bond; whence we are furnished with plenty of fine mixtures for our

British Wheats. There is also a considerable quantity of foreign Wheat under bond, and more is daily arriving to wait the opening of the ports; an event, of which neither the settled state of the weather, nor the magnitude of our present stocks, warrant us to entertain an immediate prospect.

Annexed is the present state of the Glasgow market.

Foreign Wheat,	33s. to 38s.	per boll of 240 lib.
British ditto	35s. – 37s.	
Ditto, Barley,	26s. – 29s.	per Stirlingshire boll.
Irish ditto	22s. – 24s.	per boll of 320 lib.
Ditto. Oats	20s. – 22s.	per boll of 264 lib.
British ditto	21s. – 23s.	
Beans and Peas	21s. – 23s.	per Stirlingshire boll.
Peas	22s. – 23s.	
British Oatmeal	20s. – 21s.	per boll of 140 lib.
Irish ditto	16s. – 18s.	

Inverness-shire Quarterly Report.

Since the date of last Report, the weather, though occasionally severe and stormy, was in general mild and favourable to the operations of agriculture. Field labour, notwithstanding the backwardness in the preceding quarter, is as forward as we have seen it at this season. Vegetation of every description is vigorous, and more than usually advanced. The Wheat braird has a very promising appearance, and, notwithstanding the prevalence, for some days back, of very chilling winds, the fields of Grass exhibit a vivid green. During the winter and spring, Sheep were in high condition; and a better Lambing season was never seen.

So far, therefore, as they depend on the elements, the prospects of the farmer are cheering; but there are many circumstances which compel him to view the gifts of Nature, associated with ideas of gloom and discouragement. Notwithstanding the great changes which have taken place in our credit and currency, in our trade and prices,—and notwithstanding the partial and temporary abatements granted by a few landlords, the majority of the proprietors have not yet had the wisdom to perceive the necessity of giving an adequate deduction of rents. The consequence, in corn farms, necessarily is, that large arrears are due, and that the capital and stock, as well as the spirit and confidence of the farmers are in many instances rapidly declining. Many farms are advertised to be let; but we do not hear of competition, nor do we know that many new leases have been entered into. Instances too are not wanting of large farms remaining untenanted in the unprofitable occupation of the landlord. Although Excisemen overspread the land like locusts, illicit distillation is increasing; and a *canny* householder can get from a smuggler a pint of as fine whisky as ever was tasted, for half-a-crown, which would cost in Edinburgh 6s. or 7s., and which the legal distiller here cannot sell under 5s. Such, however, is the apathy of our gentry, that no serious effort is made or contemplated to correct the absurd

and ruinous system of Revenue laws so deeply affecting our agricultural industry! And, as to the tenants, they have not yet learnt to pass resolutions, or to forward petitions; which, after all, might be unavailing; but such measures, if they do no good, could certainly do no harm.

Cattle are in tolerable condition, but few in number. The prices, therefore, are expected to be comparatively high. From the depressed state of trade, subjected as our commerce is to so many impolitic restrictions, it is not expected that the price of Wool will be so high even as last year; so that the prospects of the Storemaster are not much more cheering than those of the Corn farmer.

The quantities of Wheat and Oats which remained on hand, are nearly disposed of, at pretty fair prices; but Barley is a perfect drug. —*28th April.*

Kincardineshire Quarterly Report.

The weather for three weeks after the date of last Report was very favourable, and considerable progress was made in ploughing the land intended for Oats; but through the latter end of February and beginning of March, it was more stormy and cold; and during this period the plough was partially obstructed by frost; but, since that, the weather has been in general favourable, and the greater part of the spring seeds have been committed to the ground under the most auspicious circumstances.

From the 19th to the 26th instant, the weather was remarkably warm for the season, the thermometer generally standing at 60° in the shade, and on the forenoon of the 24th at 129°, when exposed on a front wall to the sun; but, during the last two days, we have had cold sleety showers from the north, with snow on the hills, which have brought it as low as 48°. To-day, however, it is softer, and the sun again shining bright, which gives reason to hope that this unexpected storm is nearly over. In consequence of the late very genial weather, vegetation has made a rapid progress, and both braird and grass are well advanced for the season. Oats are nearly all above ground, that is, in braird, and have a healthy appearance; and a good deal of Barley is also in braird, and looks well. A remainder of Barley and some Chester are yet to sow, perhaps something more than a fourth part of the crop. Potatoes are planted in a good many instances; and in most cases the ground is in a forward state of preparation. Wheats have, in several cases, a backward unhealthy appearance, owing to the uncommon severity of the bare winter frosts; and Clover fields are a good deal thinned, especially those of two and more years' standing. Clover of one year's growth, generally stands well, unless on soft spongy soils. The loss of Turnips was never more severely felt than this year. The White and Red varieties were, in numberless instances, completely destroyed, and even a great many of the Yellow, which rarely happens in this district.—Grass Parks have, in some instances, been renting fully as high as usual; and wintering Stock is in pretty fair demand, at tolerably good

prices. Fat is rather a heavy sale at from 8s. to 9s. per stone, but expected to improve ere the grass-fed beasts come into the market.—Bull Calves have again been in great request for rearing, and in many instances have cost more money than a year old did some years ago. Grain is in little demand, and rather lower in price than it was some weeks since; but Potatoes have lately been in more request on account of the failure of Turnip. Labourers are everywhere busily employed, at wages adequate to their support in the present state of things. It is highly worthy of remark, that, since the date of my last Report, the Earl of Kintore has generously granted liberal abatements of rent to his tenants in this county, whose leases were taken when the late war mania for farming prevailed.—*28th April.*

Letter from Langholm, 1st May.

During the greatest part of last quarter, moist and rainy weather generally prevailed in this district; in consequence of which, our seed-time has been considerably later than usual, as little grain was sown here before the second week of April. From that period we experienced dry weather; and, during the last fortnight, an unusual warmth of temperature prevailed for several days. We have since had rather cold and barren weather, with frost during the nights; which has very considerably checked the progress of vegetation, which was making very rapid advances about ten days ago.

Very little alteration has taken place with respect to the state of our markets since the date of last Report; which have been very dull during the quarter, excepting a little brisker demand for grain for seed during the season. Little Stock has been yet brought to the market here, excepting where there has been a change of tenants, in which case the disposeable Stocks have brought very fair prices; but this cannot be estimated as a fair rule of judging of the state of the markets during the ensuing season. From the present state of the Wool trade in Yorkshire, we have every reason to think that that article will be in less demand than for many years past. The Cotton manufacture here is rather getting worse, as the prospect of opening up any foreign trade, either with our Continental neighbours, or the American States, seems at present to be more gloomy and unpromising. Though the labouring classes in the manufacturing and other branches of business here have been subjected to the greatest distress, from the want of employment, and the low rate of wages; yet, hitherto, very much to their credit, they have shown no disposition to riot, or violent measures; which have of late been too prevalent in other parts of the country. A very great number of emigrants from this place and the vicinity, have this season taken their departure for America; and the far greater proportion of them for the British settlements. Indeed, such a measure is now become absolutely necessary; and Government, it is to be hoped, will, ere long, see this in a proper light, and grant the necessary aids and facilities for assisting those who are still disposed, but have not the means of transporting themselves where they may be able to sup-

port themselves and their families by their own industry. Though the manufacturing classes are the first to suffer in the present distressing times, those employed in agricultural occupations must, ere long, feel their share of distress, unless the landed proprietors should timeously prevent such a disastrous effect, by reducing the rate of their rents. If such patriotic measures are not speedily adopted by those whose interests are so deeply implicated in the consequences, such steps may be forced upon them when it is too late.

East-Lothian Quarterly Report.

THROUGHOUT the quarter, the weather has been singularly favourable to all the various branches of husbandry falling to be executed during the period; and the highly pulverized state of the surface by the intense winter frosts, gave great facility to the harrowing process in every situation. which allowed all kinds of Spring Corn to be put into the soil under the most favourable circumstances. Oats everywhere show a vigorous braird; Beans are generally rowed from end to end of the field, with the hoe at work in some instances; and a good deal of the earlier sown Barley is likewise above ground. Wheat, generally speaking, may be said to look tolerably, yet some fields after fallow are both thin and very backward; that grain, however, sown in spring, appears everywhere promising. The young Grass looks healthy; in general is well planted; and in some cases is already stocked with Cattle. Ewes and Lambs have of course participated in the benefits of the dry and favourable season. About 20s. a head for Highland Ewes, and from 24s. to 26s. a head for those of the Cheviot breed, have been the current prices for that species of stock this spring, for sales made in the district; although those brought from the House-of-Muir market were something lower priced.

Cattle fed on Turnip have paid very little during the whole season, but Sheep sold lately have made a better return; although the far greater part were disposed of before much, if any, improvement in the markets took place. Many excellent Cattle have this season, as usual, been fed in the county; and at the Haddington April fair, held under the auspices of the East-Lothian United Agricultural Society, the show was most superior. At that meeting, which was attended by a great number of respectable agriculturists, many of whom were from the neighbouring counties, a good deal of business was transacted; but perhaps 10s. per stone was hardly obtained for even the best Beef, which, considering the expense and trouble, neither of which had been spared in the feeding, was far from being a fair compensation. On that day, premiums were awarded for the two best Bulls, and likewise for the two best Stallions exhibited, to serve in the county during the season; and as it is intended to give premiums, next year, for the best fed Cattle likewise, a show of Stock may be reasonably expected rarely witnessed in this country, —of course well worthy the attention of the most respectable butchers, as the Fat shown at the April fair are always intended for sale.

There appears fully the usual quantity of Grain in the stackyards, that is generally to be seen at this time of the year; yet Haddington market, for several weeks past, has been very barely supplied, with Wheat particularly. The price of that grain has accordingly advanced considerably of late; as good samples have fetched from 36s. to 40s. per boll. Barley likewise has advanced 3s. or 4s. per boll within the last two months; but the sales have been upon a very limited scale, and the advance may chiefly be imputed to the demand for seed. Oats, with Peas and Beans, the supply of which has been liberal, have rather declined of late than otherwise; the best of the two latter bringing only about 17s., and the former about 20s. or 21s. per boll. The farmers in the south of England are understood to have complained bitterly, during the winter, of their market in London having been generally glutted with Wheat of fine quality from Scotland: But, to judge from the recent supplies brought to our own market here, it may be fairly presumed, that little cause of complaint, on a similar score, will be drawn from this district for some months to come.

The following are the fiars prices of grain for the district this season, viz. crop 1819, sold for ready money, and delivered in the county—

	WHEAT.	BARLEY.	OATS.	PEAS.
First, -	L. 1 12 10½	L. 1 4 6½	L. 0 18 10¼	L. 0 17 4½
Second, -	1 11 6¾	1 3 3¾	0 17 10¼	0 16 9¾
Third, -	1 9 10¾	1 1 10½	0 16 8¼	0 16 1½

The question concerning the Corn-laws, appears to be still keenly agitated in different parts of the island; but, from the great difference in opinion relative to the cause of the low prices of grain, and the general distress of the country, with the very different remedies proposed to obviate the evil, added to the inflamed state of the public mind among the manufacturing classes, it does not appear very probable that the Legislature will be in a hurry in taking up the question. Some suppose the violent changes in the nature and amount of the currency of the country, brought about by the financial measures pursued by the Government, to be the great cause of all the embarrassment and distress. Others again say, that the inefficiency of the present Corn-law is the chief cause. The former say, Restore the circulating medium of the kingdom to the amount it was during the war, and every thing will go right. Some among the latter class of political economists think, that to levy a heavy duty on every article of agricultural produce imported, and nothing more would be requisite; while others of the same class say, Raise the rates at which importation is permitted; and a third party pronounce the warehousing system to be the very bane of the farmer's prosperity—and, therefore, that that system ought to be instantly abolished. Among so many conflicting opinions, both with regard to the cause and the cure of the present almost intolerable evils that press upon the country, it is certainly by no means an easy matter to say how far any of

the parties are right or wrong; yet it must be obvious to even the plainest understanding, that, had the capital which has been invested in foreign grain, lying in British granaries for nearly the last twelve months, been employed in speculating in home produce during the winter, when prices were so low, these low prices would not have continued so long as they did, to the serious injury of the farmer; and such, most probably, would have been the case, had it not been for the warehousing system. To say that, were that system abolished, the only difference it would make would be the laying up of stores on the Continent of Europe, ready to be poured into the country whenever the ports were opened, in place of having these stores lying in a British warehouse, is certainly by no means agreeable to the ordinary rules of human prudence; for, where one man is found inclined to speculate in an article locked up, it may be said, in a foreign territory, there would be many, as at the present moment, who would not hesitate to purchase a commodity which was daily under their own eye and management, although they could not dispose of it for immediate consumption,—the circumstance of its being transferable at pleasure with a possible profit, affording most of the advantages they anticipated in their purchases. At the same time, with respect to the idea of an addition to the quantity of the circulating medium of the country having a beneficial effect upon the general prosperity, it is probable that considerable benefit might be derived from that source also; as, were Bank paper again to be rendered so plentiful as to require five one-pound notes to purchase an ounce of gold, in place of about four as at present, it seems obvious that a proportional increased quantity would necessarily be given for every other article of indispensable utility.—*April 28th.*

Morayshire Quarterly Report.

After one of the severest winters we have for a good many years experienced, we have had a favourable seed time; and the Oats, and part of the Barley, have been cast into a dry mould. The young Wheats, having been a good deal protected by snow, have not suffered much by the severe weather; and although they are not far advanced, are pretty thick in the ground.

Cattle have sold at very fair prices; though they leave very little for winter keep, having been bought in very high in autumn.

A small advance took place lately in the price of Wheat, which rose as high as 35s., but has again fallen back to 32s. and 33s. per boll. Oats have sold at 20s. per boll of 5 firlots; and Barley, at 21s. to 23s. per boll of 4 firlots. But both these kinds of grain have been dull of sale even at these prices, and there is a considerable quantity of them still in the hands of the farmers.

In urging the repeal of the Corn-laws, the Edinburgh Review asserts, that the interest of the farmer is not the same in this matter as that of the landlord; that nothing, indeed, can be more completely different (No. 65, page 184); in other words, that a free importation would be beneficial to the farmer. It would have been candid

to have excepted the *present* generation of farmers, who, it is obvious, must be ruined by the measure which the Reviewers recommend (at least, if the repeal should have the effect which they anticipate from it, to bring down the prices of all kinds of Corn *one-third*); unless it were, at the same time, enacted, that as the price at which foreign Corn should be admitted duty-free declined from 80s. to 50s. per quarter, as the Reviewers advise, the farmer, whose lease was of a date previous to the repeal, should have a right to a corresponding deduction from his rent.

The state of the country must be hopeless, indeed, if the distress of our manufacturers can, with any fairness, be ascribed to the high price of Corn. It is much too cheap for the farmer.—*28th April.*

Perthshire Quarterly Report.

The first week of February promised a very early spring, the temperature at that time being frequently at 50, and upwards. Those expectations, however, were partially disappointed, by the cold dry winds which set in towards the end of the month. At the same time, the weather was, upon the whole, very favourable; and field-work, by the end of the month, was in a very forward state.

The month of March was in all respects what the farmer could wish. The mean temperature was higher than it generally is at that season; and the operations of agriculture did not experience an hour's interruption from bad weather. The quantity of rain was less than in any one month during the last six years; and, though vegetation was not so rapid as last year, the progress of the season was more gradual. At the end of the month, the orchards presented a very promising appearance.

April began as favourably as March had been. On the 5th, there fell about half an inch of rain; and after the 7th, there was scarcely a drop during the rest of the month. The temperature progressively improved till the 25th, when the thermometer stood at the very unusual height of 70°. This extraordinary elevation of temperature was followed by a very sudden depression: the wind blew from the north and north-east with great violence, and the thermometer sunk to 34½. The consequence has been that vegetation is checked—Grass is making no progress—and Wheats on light soils are suffering severely. Barley has been sown on clay soils in excellent condition, and is brairding tolerably well. On light soils, a great deal remains to be done; and many are waiting for rain. Potatoe seed is far advanced. The following is an abstract of the weather for the quarter.

	Number of Fair Days.	Number of Rainy Days.	Quantity of Rain.	Mean Temperature.
February -	24	5	1.198	39.1
March - -	25	6	0.332	40.6
April - -	24	6	0.690	46.7
			2.220	42.1

On comparing the above with the corresponding quarter of last year, it will be found that the present season has been remarkably dry; the quantity of rain being less than one-third of last year, and the mean temperature higher by one degree. The season to which it bears the most striking resemblance is that of 1817.

The markets began to rise about the beginning of February; but, of late, they have been almost stationary. Grass Parks were let, at the commencement of the season, cheaper than formerly; but the latest let have looked up. There is a demand for Lean stock.—Present prices in the Perth market—Wheat, 33s. to 35s.; Barley, 20s. to 23s.; Potato Oats, 16s. to 19s.; Common, 15s. to 18s.; Quartern Loaf, fine 11d., coarse 8d.; Oatmeal, 1s. 2d. a peck; Meat, 7d. to 8d. per lib.——1*st May.*

Ross-shire Quarterly Report.

The spring has on the whole been favourable, notwithstanding we have had frequent changes from very opposite extremes. Occasionally it has been so warm as to border on the heat of summer, and oblige our ploughmen to cast their coats; when it suddenly changed to violent and rigorous storm, which made us muffle up as in the dead of winter. The lands were dried by high winds early in February; and this, followed by ten days of very mild weather, brought through the late sown winter Wheats which had lain for two months unseen. It also enabled us to sow spring Wheat at a desirable period, and the Beans and Peas were principally put into the ground during that month—a circumstance highly essential towards their attaining maturity in proper time. March commenced with a severe storm of high wind and snow from the north, which lasted the two first days, and rendered the land so wet as to prevent the Oat seed from being generally begun till the middle of the month. After this there were a few fine days, and a good deal of Oats were sown in excellent order. The last ten days of the month the weather was broken, with heavy showers of snow and sleet, which put a stop to the Oat seed (unless on very dry lands), which was not finished till the first week of April. The 3d, 4th, 5th, and 6th of that month were very temperate. Betwixt that and the 20th, the air was frosty and cold, but dry and favourable for working the land. After a violent squall on the 19th, we had again four or five days like the finest June weather, which covered the country with a beautiful verdure; but the progress of this has been again checked by excessively cold high north wind on the 26th and 27th, accompanied with slight showers of snow and hail. Barley seed is far advanced, and Potatoe planting nearly half over. Notwithstanding the repeated interruptions which have occurred during the seed season from tempestuous weather, yet, on the whole, it has been accomplished in good time and satisfactory condition. The braird of spring sown Corn is full and vigorous.—Wheats are promising, but not forward; and the fields for Hay are well stocked with Clover and Ryegrass. Although no loss can be said to have been sustained by the rotting of Turnips, yet the scan-

tiness of the crop has prevented many from making them last to the Grass season; and Straw being also scarce, has obliged Cattle to be turned out of the straw-yards earlier than the growth of the pasture would justify. The same reason has probably also operated to produce a rise on the rent of Grass Parks, which have let higher than last year. A little has been done of late in selling Corn in the country.—Wheat at from 32s. to 34s. 6d., and Barley from 22s. to 24s. per boll.; Oatmeal at 23s. to 24s. per boll of 9 Dutch stones. There has been no demand by drovers for Cattle. Beef and Mutton sell at from 7d. to 8d. per lib., which leaves a little payment on Fat Stock; but that is a branch extremely inconsiderable in this quarter. The weather having been good since the Lambing commenced, in the Highlands it is supposed that the flocks will be doing well. The rent of land does not advance in this county, nor can it be expected to do so unless an alteration takes place in the Corn or Malt Laws. How far it is expedient to interfere with the former, in the present state of the country, may be doubted. But the imposing of a duty on Scotch malt equal to what is paid for the growth of England, is a burden which the farmers of Scotland could never have contemplated when taking their farms; and, if not altered, will, as the lands fall out of lease, affect the proprietors in a manner they did not think of, when they allowed the act to pass without opposition. —*28th April.*

Tweeddale Quarterly Report.

Since my last, the weather has been good, taken on the whole. The Spring labour has been carried briskly on, and the seed put into the ground on a dry bed. The land having been so much ameliorated by the winter frosts, has harrowed freely. The Barley Seed is mostly got in, and the Potatoes planted. Seldom have the Field-operations been so far advanced at this season, and done to as good purpose. Wheat is looking well; and the Oat and Peas braird is vigorous and healthy.

Although the weather has been good for carrying on work, vegetation has not been early: It does not exceed ten days, since any growth appeared worth notice. Owing to the waste of Turnips by the winter frost, an earlier growth would have been very acceptable; though perhaps not more beneficial, as an early growth is generally checked, and sometimes greatly injured, by succeeding frosts and inclement weather.

Although Turnips, for spring keeping, have been scarce, we have heard no complaints of the want of Fodder. Stock of all descriptions are in good order. Stall-fed Cattle, and turnip-fed Sheep, are mostly sold off. This must not be the case in other counties, as we find the markets are fully supplied, and prices still low.

Stock Ewes, upon hill pasture, have begun to lamb; and they have a good appearance of milk. The attention of the shepherd is chiefly required to see that neither ewe nor lamb die in lambing. Nothing of cold nor hunger is felt. Ewes go longer in good dry

weather; the lambs are larger, and more severe for the ewe, in lambing. We would be glad to have a few weeks longer of such weather; but we are afraid of a sudden change. Spring Ewes have not been in demand this season, which may be partly owing to the waste of the turnip crop by the winter frost; much Stock having been turned to the pastures that would have been continued on turnips; of course, no keeping was to spare for additional Stock. Besides, the grazier was poorly paid last year, prices were so extravagantly high; they are much lower this year; but, when compared with the weekly market at Edinburgh, I believe they are as high as to afford a prospect of paying the grazier.—Cheviot Spring Ewes of this county may have averaged 25*l.* per 21 Ewes; and Black-faced ditto, 22*l.* per ditto.

Grain is plenty; and if the labouring class had employment and moderate wages, Grain would be too low priced, which it surely is, to indemnify the grower. Owing to the stagnation of manufactures, tradesmen have been obliged to become farm-servants, and take any kind of out-of-door employment they can fall in with, and many a one can find no employment whatever. Notwithstanding, we have a peaceable county; comparatively speaking, there is hardly so much as a complaint to be heard.—26*th April.*

ENGLAND.

Cumberland Quarterly Report.

The season has, upon the whole, been favourable to field operations, particularly of late. A great proportion of the Oats were sown prior to the 10th instant. The ground was in fine order for depositing the seed. Much of the Barley after Turnips is put in under very favourable circumstances; and the state of the ground has been well suited to the sowing of Grass-seeds; of course, a considerable portion is deposited under fair hopes of success. Wheat has suffered less from the late severe winter than we were led to expect, and is, upon the whole, promising. Some damage has been done to the young Clovers, by being partly uprooted by the late winter frosts.

The cultivation of Timothy Grass, *Phleum pratense*, is rapidly increasing in this county. A circumstance occurred lately to the writer of this, which has influenced him to sow the whole of his land, intended to be laid down at present, with this grass, along with Clover. In the beginning of the month of January last, his milch cows, at that time ten in number, declined suddenly in their milk, which he attributed to the cold weather; though it perfectly corresponded with the change of their hay from Timothy Grass and Clover, to hay from Rye Grass and Clover. In about a fortnight afterwards, the Timothy Grass was restored to them, when the quantity of milk suddenly increased. In about three weeks, that sort of hay was entirely finished, and the quantity of milk again underwent a sudden diminution at the same time;—thus establishing the fact,

that hay from Timothy Grass is more nutritive, when given to milch cows, than that from Rye Grass, by the most conclusive and unquestionable evidence.

Few Turnips of any sort were remaining at the commencement of the present month. Mr Samuel Rigg of the Abbey, Abbey Holme, one of our most intelligent and scientific farmers, placed a considerable plot of Swedish Turnips upon the ground in the month of November last; and they were in a state of tolerable preservation at the commencement of the present month, the greatest part of them being perfectly sound. It is said by some, that placing them upon the ground closely together, does not do very well in open and wet winters. Mr Rigg attributes this, partly to not placing the tops all one way, which prevents the turnip tops from growing, and thereby occasions much waste.

At the sale of Improved Short-horned Cows, at the Bush farm, near Longtown, the property of Lister Ellis Esq., nine lots sold for forty-two guineas each; the highest priced Cow brought fifty-two guineas; and the highest priced Bull sixty guineas. All the highest priced ones were bought by breeders of this county—thus proving that this valuable breed of horned cattle are in noway diminishing in our estimation. By far the best part of Mr Ellis's stock were the progeny of Western Comet, a son of Major by Comet, out of Mr Charles Colling's Lady.

By a singular error in political economy, we often see the effects of commodities attributed to money; and, *vice versa*, the effects of the supply and demand of money attributed to commodities. Hence arise the errors of Mr Webb Hall and his infatuated followers. Instead of attributing the low price of corn to a contracted quantity of money, and the forcible low price of gold, they lay the cause of the low price of grain to foreign importations; at a time too when no foreign corn to any serious amount enters our markets. The distresses of the farmer, as well as the country at large, are therefore the effects of the low price of gold, which nothing can remedy but a rise in the legal price of that precious metal. High and low prices, when taken in their general sense, are wholly the result of the supply and demand of the quantity of money, and not of the supply and demand of commodities. Hence, if farmers want a high price for their grain, they must petition the Legislature to raise the price at which Bank of England notes are convertible into gold, and not ask for another useless Corn Bill.

Wheat 9s. 3d. per Winchester bushel; Barley 4s. 4d.; and Oats 3s. 3d. per bushel.—*April 26th.*

Letter from Lancaster, April 27th.

In the early part of February, the weather was very agreeable: the latter part of the month was windy and cold. The ground worked well from the effects of the severe frosts. March and the beginning of April were wet, and threw the land into a wet, heavy state, defeating the good done by the frost, and retarding the sowing of

the spring crops upon all the cold soils, of which description we have a very large proportion in this county. About a fortnight ago, a fortunate and pleasant change occurred, and sowing has been completed under auspicious circumstances. A few days before and after the 23d, it was oppressively warm, the thermometer being, at 7 in the morning, at 57° and 58°, and advancing in the course of the day to 66°, in a north aspect. The Pastures quickly showed the effects of it, and changed in a few days their inanimate brown for a lively verdure. The transition to cold was very sudden and severe; on the 26th the thermometer falling to 42°, and still lower to-day; and we have had some snow.

A part of the Wheat looks poor, being thrown out in winter. Turnips have also suffered much: some fields not stored have nearly all rotted. But this is not of much consequence with us, as they form but a small proportion of the food of cattle. Hay is very plentiful and cheap: at Preston it is selling at 4d. per stone of 14 lib.

Our Grain markets continue low. Wheat is 9s. 6d.; Beans 5s. 4d.; Oats 3s. 2d.; Barley 4s. per Winchester bushel. Oatmeal 35s. per load of 240 lib.

Farmers are considered to be forward in thrashing and selling their grain, most being unable to keep it.

Cattle do not pay for feeding, when the price at which they were bought in is considered. Beef is now selling at 6d. to 7d.; Mutton the same; Veal 6d. per lib.

Cattle for feeding are in good demand. Milkers have been reduced in value. Young Cattle, Horses and Sheep, where even moderate attention has been paid to the breeding, sell very well; but inferior stock is difficult to dispose of at any price.

In some instances Land has been reduced 20 or 30 per cent.; but, generally, there is not much falling off in the price of letting; but the farmers use all their contrivance to plough that land which will yield them crops without much expense, sacrificing the future to the present. Salt has not yet found its way as a manure to this neighbourhood, nor does there appear any disposition to make trial of it.

Letter from Liverpool, 26th April.

DURING the last three months, we have had very little fluctuation in the Corn trade, our supplies all along having been fully equal to our demand, and, from present appearances, they are likely to hold out until we have another harvest; and, should this prove to be the case, there is very little prospect of the Ports opening according to the existing laws, even in August; but certainly much will depend on what sort of weather we have between and that time.

All eyes are now directed to the proceedings in Parliament. Amongst other questions of vital importance, that relating to Corn it is expected will undergo serious discussion—whether it will be protecting duties on a graduated scale, or duties of an unvarying nature, or an extension of the average system to Ireland and Scotland: —Whatever the alteration may be, let us hope that the wisdom of

Parliament may be exerted for the real interests of the country. We still adhere to our former opinions on this subject, that, should the Ports be thrown open to the importation of foreign Corn, let the duties be what they may, no good can possibly result to the agriculturist from such a measure, but, on the contrary, it must produce permanent low prices. Experience plainly shows us, that the foreigner can accommodate himself to any price.

It seems agreed on by all parties, that some change is absolutely necessary; but what sort of change this ought to be, it is not for us to say; but the country is certainly in a very alarming situation. We refer you to the annexed Importation List, &c.

Current Prices, Tuesday, 25th April, 1820.

Wheat, Fine Sweet English White	10s. to 10s. 9d.	per 70 lib.
" Do. do. Red	10s. - 10s. 6d.	
" Do. do. Dantzic, Elbing, Stettin, Konigsberg, &c.	10s. - 10s. 6d.	
" Rostock, Wismar, Hamburg, Antwerp, &c.	10s. - 10s. 6d.	
" Mediterranean, Odessa, Petersburgh, Riga, &c.	8s. - 8s. 9d.	
" United States	8s. 6d. - 9s. 6d.	
" Quebec	8s. 6d. - 9s. 6d.	
" Fine Sweet well-prepared Limerick, Waterford, &c.	9s. 7d. - 9s. 10d.	
" Cork, Youghal, Wexford, Dublin, Strangford, Belfast, &c.	9s. 6d. - 9s. 10d.	
" Fine Sweet Old Irish	9s. - 9s. 9d.	
" Ordinary and Inferior qualities	8s. 6d. - 9s.	
" Scots, Welsh and Manx	9s. 9d. - 10s. 3d.	
" Foreign in Bond	6s. 6d. - 7s.	
Oats—Fine English, Scotch, and Welsh, potatoe	3s. 6d. - 4s.	per 45 lib.
" Ditto ditto common	3s. 3d. - 3s. 6d.	
" Ditto, sweet, well prepared Limerick, Sligo, Killala, Westport, Drogheda, &c.	3s. 7d. - 3s. 7½d.	
" Waterford	3s. 4d. - 3s. 5d.	
" Cork, Youghal, Wexford, Dublin, Strangford, Belfast and Newry	3s. 4d. - 3s. 7d.	
" Old Irish, and inferior, new	3s. 0d. - 3s. 3d.	
" Foreign	2s. 9d. - 3s 4d.	
Barley, finest sweet English malting	5s. 6d. —	per 60 lib.
" Ditto, Scotch and Welsh	5s. 2d. - 5s. 6d.	
" Irish and Foreign malting	— —	
" Ditto, ditto, for grinding	3s. 10d. - 4s. 3d.	
Indian Corn, per Winchester bushel	4s. 6d. - 5s. 0d.	
Ditto, ditto, in bond	3s. 6d. - 3s. 9d.	
Peas, white boiling, per quarter	50s. - 58s.	
" grey	38s. - 48s.	
Beans, per quarter, fine English	46s. - 50s.	
" Scotch, Irish, Dutch, &c.	44s. - 46s.	
" Mediterranean	32s. - 38s.	
Malt, per 9 gallons, fine Norfolk, &c.	9s. 6d. - 10s.	
Middling, and inferior qualities	8s. 6d. - 9s.	
Rye, per quarter, English	none.	
" Ditto Foreign	40s. - 44s.	
Flour—English, fine, second, p. 280 lib.	54s. - 57s.	
" Irish ditto ditto, 240 lib.	44s. - 46s.	
" American, fine, sweet, p. 196 lib.	39s. - 40s.	
" Ditto in bond	30s. - 33s.	
" Ditto sour,	36s. - 39s.	

Oatmeal,	English	33s. - 36s.	per 240 lib.
"	Scotch	30s. - 34s.	
"	Irish	27s. - 32s.	
Rapeseed, per last,—Irish,		34*l*. - 35*l*.	

IMPORTATIONS *of* GRAIN, *&c. into the* PORT OF LIVERPOOL, *from the* 31*st January* 1820, *till the* 24*th April* 1820, *inclusive.*

Date	Description.	QRS. Wheat.	QRS. Barley.	QRS. Oats.	QRS. Malt.	QRS. Beans.	QRS. Peas.	QRS. Rye.	Oatmeal, 240 lib.	Flour, 280 lib.	Amer. Fl. Barrels 196 lib.
1820	Coastwise	4,197	5,607	4,589	4,801	272	96	15	1,329	52	—
Feb.	Irish -	23,204	1,141	30,452	—	2,407	114	—	592	4,056	—
	Foreign	700	—	—	—	630	—	—	—	—	7,521
	Coastwise	2,593	2,661	6,575	2,090	2,845	93	200	700	107	—
Mar.	Irish -	25,936	6,007	29,203	—	564	86	—	874	4,314	—
	Foreign	72	—	—	—	80	—	—	—	—	1,800
	Coastwise	4,507	2,557	3,188	1,113	439	52	500	256	40	—
Apr.	Irish -	21,120	1,256	27,891	—	—	90	—	2,222	3,195	—
	Foreign	1,931	—	—	—	790	—	—	—	—	4,628
	Total -	84,260	19,229	101,696	8,004	8,027	531	715	5,973	11,764	13,949

Norfolk Quarterly Report.

ON the whole, though the weather has been at times excessively severe, it cannot be called an unfavourable winter for the farmer,—the frost having pulverized the land, and brought it into fine order for the reception of the spring seed. Turnips have long since been finished; and the greater part of this crop having been materially injured by the frost, much inconvenience was occasioned to the holders of Cattle and Sheep, by the want of fodder and provisions for them. In consequence, the Lambing season has been generally unfortunate, and considerable losses have been the effect of so rigorous a season. Those farmers, indeed, who were provided with good warm yards for their breeding Ewes, have reaped the benefit of them in an increased crop of Lambs; but this could by no means be general; and, I am sorry to add, that, taking the county throughout, the fall will be far below an average. The young Wheat is looking very indifferently in some districts; and great breadths must necessarily be ploughed up, as being too thin of plant to answer standing. This is supposed to be owing principally to frost. Latterly, the weather has been highly favourable to the plants; and they have made a proportionably rapid growth. Still the general prospect as to this crop is far from good. Barley has vegetated as quickly and as regularly as ever was known; and this, as well as most of the spring crops, is looking much better than those of Wheat. The fallows for Turnips are getting into a state of forwardness; and the dry weather of the last fortnight has greatly favoured the cleaning them, especially where the harrows have followed close upon the plough. This is a matter often too much neglected; and great clods are fre-

quently formed, which, by proper care, might have been prevented. Owing to the shortness of keep, Stock of all sorts has been very dull of sale; every body wanted to sell—very few to buy. Beef and Mutton are selling at 8d. per lib. A good deal of Linseed Cake, and in some cases Corn, has been used to supply the want of Turnips for fatting beasts. The Corn markets have been very regular, and very flat, the last quarter. The produce was invariably far short of what was anticipated; and the lowness in the price of Corn, notwithstanding this circumstance, has induced many to join in petitions to the Legislature, to enact some means of stopping the immense importations of grain, by which they conceive they have been injured, and no one benefited but the foreign farmer. Of course, there are various opinions on the measure; but the farmers, as a body, are friendly to it, notwithstanding our great patron of agriculture, Mr Coke, has publicly declared himself inimical to any further restrictions on the trade, and recommends, in lieu of them, reduction of taxes, and economy in the public expenditure; alleging, and very justly, that Taxation is the cause of all our distress, and that, were the cause removed, the effect would cease. No one attempts to deny this; But how are we to remove this cause? How are we to get rid of taxes? The question lies in a very narrow compass: Are they to be paid, or are they not? If the former, we must have *means* to pay them; but, if the latter, the sooner the trade is thrown open to foreigners, the better. As long as our present burthens continue, we think it quite enough to support those burthens without their being increased by a competition with a race of growers who have the advantage of us, at starting, of at least 30s. per quarter. All we say is, Shut out these people; they have no right to make a market of our distresses;—but, if you do admit them, put them on a footing with ourselves, and make them pay for such admission; that is to say, impose a duty on their produce equal to the taxes *we are compelled* to pay on our own. Let us start fair, or we shall have no chance of winning the race.—*April 26th.*

Nottinghamshire Quarterly Report.

With the exception of a few severe frosty days in March, the weather has been very favourable during the last quarter. Heavy lands never were in a finer state for the spring seed, which was sown with little interruption in good season. Wheat, upon strong lands, and particularly on the soils containing too great a proportion of indigested vegetable matter, has suffered materially from the effects of frost; and much has died away, leaving the plants thin and weakly upon such lands. On lighter descriptions of soil, Wheat has, upon the whole, an indifferent appearance; and a great part of it is of bad colour. Spring corn generally has a good appearance; and there is a prospect of great crops of Beans. Artificial Grasses were early and good; but Turnips were consumed too soon, and seeds have been heavily stocked. Clovers, in some situations, have failed, from the same cause which affected Wheat.

The Corn markets have been very heavy for every kind of grain except Barley, which has been sold at a fair price; the crops of Barley have proved deficient in quantity. Wheat is now worth from 64s. to 68s.; Barley from 38s. to 44s.; Oats from 20s. to 24s.; and Beans from 48s. to 52s. per quarter.

Fat Stock is not plentiful, and a great proportion of it is ordinary; but there is a small demand for it in the manufacturing districts. Beef is now worth from 7s. 6d. to 8s. 6d. per stone, and clipped Sheep from 7½d. to 8d. per lib. and sink offal, which are not remunerating prices, as winter keeping was very expensive. In-calf Cows and Heifers are not well sold; fresh Drapes and Oxen are readily disposed of at good prices. Store Sheep are lower by nearly 10s. per head than the prices of last spring; and Horses for husbandry are indifferently sold.

The demand for Hops has been trifling, and prices remain without alteration: the growing plants are healthy and regular.

Most farmers have reason to complain they are not remunerated for their labour and skill; and although work has been done this spring with great facility at small expense, and Turnip fallows are in a forward state, yet the prices of produce are very discouraging; and many have great difficulty in finding money to carry on their business.—28*th April.*

Quarterly Report for the East Riding of Yorkshire.

IMMEDIATELY after the last Report for this district went to the press, it became evident that the Turnips had not only been much injured, as we imagined, but that they were totally destroyed. The severity of the frost, combined with the variation of temperature, had been too much for the Yellow, and even for the Swedish Turnips, to bear, though these latter were but partially injured. In consequence, the food for fattening Cattle and Sheep was extremely scarce, and much grain consumed by them. This occasioned considerable depression, *pro tempore*, in our Cattle markets, and, in like manner, some advance in the prices of grain; though, since that period, the reverse has taken place.

The ploughs, since January, have been constantly at work; the seed has been put into the ground under favourable circumstances; and farm work, in general, is in a state of great forwardness. Wheat does not promise abundance; yet it is impossible, at this early period, to form any just calculation upon the product of the harvest.

The Oats are getting well out of the ground, and the land is in an unusually fine and friable state for Barley, which crop is seldom sown with us before the present period.

The season has been remarkably favourable for the young Lambs, of which there appears to be a great abundance. The dryness of the weather has made the scarcity of food less injurious than it otherwise might have been. Store Cattle, and more especially such as are in immediate request by the graziers, obtain such high prices as indicate a scarcity in the country. Sheep, on the contrary, are evidently

plentiful. Potatoes have greatly fluctuated in value in the month of April—those for the table having, in the early part of it, been as low as 4s. per tub of 3½ Winchester bushels—afterwards advanced to 8s., and then fallen to 4s. again. Present prices, Beef 8s.; Mutton 8s. 6d. per stone of 14 lib. Wheat 60s.; Beans 42s.; Barley 34s.; Oats 20s. per quarter Winchester.—1*st May.*

APPENDIX TO SCOTTISH INTELLIGENCE.

Quarterly Report for Berwickshire.

FROM the date of last Report to the 16th of February, the weather was uncommonly mild for the season. It then changed to pretty smart frost, which, with frequent snow showers, continued till the 9th of March, and returned on the 13th, 22d, and 24th; it fell in greater quantity on the 25th and 26th;—the rest of the month was very favourable for field labour. There were showers of snow also on the 6th, 7th, 8th, and 26th of April, and on the 2d of May. We had no heavy nor continued rain except in the night of the 21st and morning of the 22d of February, the afternoon of the 26th of April, and the 2d of May, from the morning till 7 P. M., when it began to snow. There were very high winds on the 2d of March, and on the 19th and 26th of April. On the 25th of the latter month, the heat was so great that the thermometer in the shade, in a northern exposure, stood at 67° at two o'clock P. M. But, in general, the spring has been rather cold, and of course vegetation slow. Wheat, where it was exposed to the severe frost, was much thrown out, and has an indifferent aspect; but on good Wheat soils it has a fair appearance. Except on fields not cleared of Turnips, the Oat seed was nearly concluded in the month of March, and Beans and Peas about the same time; and, upon the whole, the seed was put into the ground in favourable circumstances. The sowing of Barley, which in some instances commenced in the end of March, is now almost concluded; and for the last ten days, the planting of Potatoes has been general, the land for which has never been easier cleaned, in so far as it depended on the weather. The braird of Oats, Beans, and Barley, is remarkably strong and healthy. Peas, also, have a fair appearance; and dry Clover fields abound in plants.

The failure of Turnips was universal, particularly the common species, by the end of March, which brought too great a proportion of the Feeding Stock to an early market. Sheep, in many instances, were sold from 2s. to 3s. a head less money than they cost before they were laid upon Turnips, owing to the early failure of food, and the extravagant prices at which they were purchased. Those who had sown a greater quantity of Swedish and Yellow Turnips, have been enabled to keep part of their feeding Cattle till now; and therefore are bringing them to a better market. We hear of no want of fodder for the keeping Stock, which are in good enough condition. Notwithstanding the severity of the winter, the Store flocks have stood out very well. Bred Ewes began to drop their Lambs about the 10th

of March; and the lambing season for Cheviot and Black-faced ditto is now concluded. There, perhaps, were never more twins. The only drawback upon the mothers, was the want of their usual quantity of Turnips in the spring. The number of twins may be accounted for from the high state of the Ewes in Autumn; and, for the same reason, some loss of mothers has been sustained in bringing forth their young. At Dunse New Sheep Fair in March, great Ewes sold, at an average, about 3s. a head less than last year; and the demand has not been brisk in any of the markets for this species of stock. At the new markets at Coldstream and Kelso in the same month, there were large shows of Fat Cattle; the sales were slow, but few returned home, and prices were fair. At Coldstream, on the last Thursday of April, Fat was in great demand for the South, from whence there were many buyers, at from 9s. to 10s. per stone Dutch, sinking the offals. On the following day, at Kelso, there was a good show of both Fat and Grazing Cattle: Fat brought nearly the same prices as at Coldstream, though the market was slower. A number of Queys and Steers of two years old, were readily purchased by English dealers, for laying on grass. Milch Cows, during the quarter, have averaged fair prices. They were dear, as usual, early in the season, and dropt in price as milk became more plenty. Calves for rearing have been eagerly sought after, and have fallen from 30s. and upwards to from 15s. to 17s. a head. Though the number of Grass Parks is increasing out of all due proportion, early and good pastures have been eagerly taken at 10 per cent. above last year; but there are a number still to let. The demand was brisk, owing to the failure of Turnips.

The Corn market, which improved till the end of March, dropped a little; but for the two last weeks has been on the rise. Wheat brings 48s. to 53s.; Barley 22s. to 25s.; Peas and Beans 25s. to 28s.; Oats 17s. to 20s.;—all per boll of six Winchester bushels. Oatmeal 35s. to 38s. per load of 16 stones Dutch;—sold in retail at 2s. 4d. to 2s. 8d.; Barley and Peas do. at 1s. 10d. to 2s. per stone. Quartern Loaf 10d. to 10½d., taking the sack of Flour of 20 stones English at 53s. 4d. to 55s. The fiar prices, which were struck on the 2d of March for Grain sold before Candlemas, are—Wheat 2*l.* 1s.; Barley 1*l.* 1s.; Oats 17s. 6d.; Lammermuir Barley 1*l.*; Do. Oats 16s.; Peas 1*l.* 6s.; Oatmeal 16s. 6d.;—all per Berwickshire boll.

Grass-seeds have been purchased as follows—Red, or Broad Clover, at 4*l.* to 5*l.*; White do., 5*l.* to 6*l.* per cwt.; Rye Grass, 20s. to 35s. per boll; Potatoes for seed, 8s. per boll; Lintseed, 1s. 6d. per capful.—*May* 4.

No. LXXXIII. will be published on 2d Monday of August.

D. Willison, printer, Edinburgh.

Mr DICKSON'S

PATENT WATER PRESSURE ENGINE.

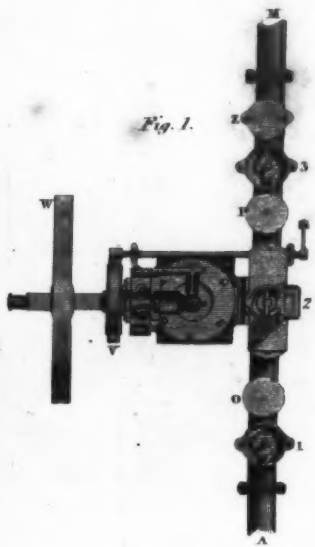

Fig. 1.

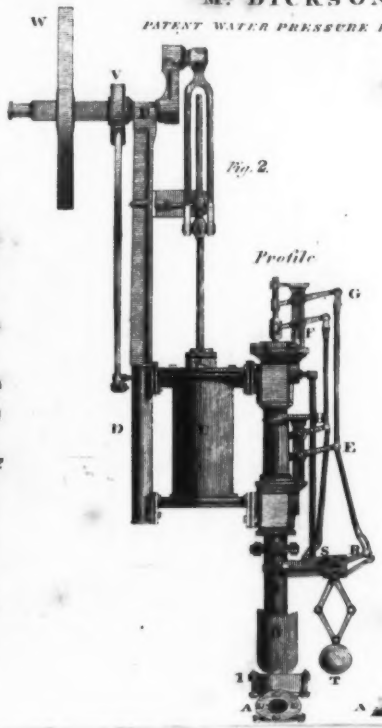

Fig. 2.

Profile

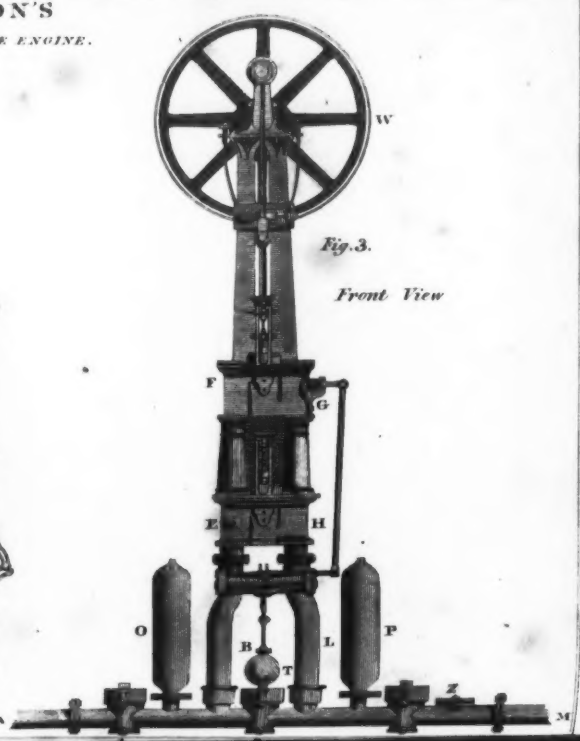

Fig. 3.

Front View